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AMSTRAD PCW

8000 PLUS

8256 • 8512 • 9512

ISSUE 18 • MARCH 1988 • £1.50

STOP PRESS!

Five copies of AMS's new desktop publisher must be won

Battle of the giants

LocoScript or Protext – which one's the best for you?

PLUS: Complete PCW buyer's guide to databases, educational, communications and programming software

MASTERFILE 8000

FOR ALL AMSTRAD PCW COMPUTERS

MASTERFILE 8000, the subject of so many enquiries, is now available.

MASTERFILE 8000 is a totally new database product. While drawing on the best features of the CPC versions, it has been designed specifically for the PCW range. The resulting combination of control and power is a delight to use.

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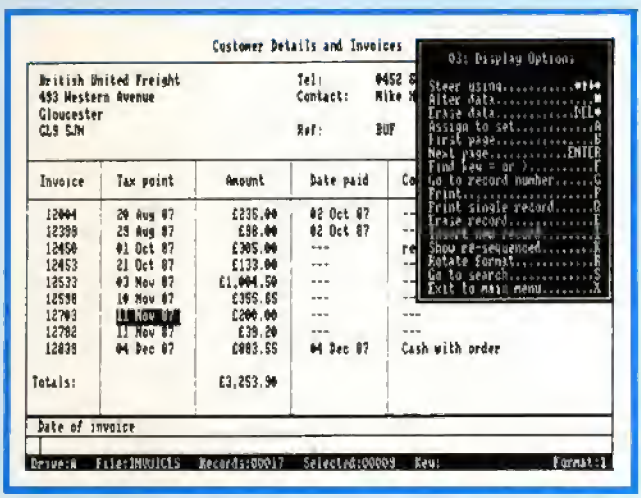

Keyed files are maintained automatically in key sequence, with never any need to sort. You can have unkeyed files too, where records can be inserted at any point in the file.

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MASTERFILE 8000 is totally menu-driven, fully machine-coded, and comes with example files and a detailed manual. We claim (modestly) that you will not find another filing system with such power, flexibility, and friendliness.

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Our normal response is return of post, 1st class.

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FAX - 0225 446019

SUBSCRIPTIONS
SPECIAL OFFERS

THE OLD BARN
SOMERTON
SOMERSET - TA11 7PY
TEL - 0458 74011

EDITOR
Ben Taylor

ASSISTANT EDITOR
Alec Rae

TECHNICAL EDITOR
Rob Ainsley

PRODUCTION EDITOR
Julia Miller

ADVERTISING MANAGER
Margaret Clarke

AD PRODUCTION
Jenny Evans
Diane Taverner
Clare Woodland

ART EDITOR
Kim Bale

ART TEAM
Angela Neal
Sally Meddings

SUBSCRIPTIONS
Carne-Anne Porter

MAIL ORDER
Sarah Richards

PUBLISHER
Chris Anderson

COVER PHOTOGRAPHY
STUART BAYNES PHOTOGRAPHY
BATH
TEL - 0225 66340

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OPENING MENU

OPENING MENU
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Technical help, social comment, the meaning of life... it's all here.

Three reasons for using LocoScript 2 ...

Better Word Processing

LocoScript 2 is the superior word processor for your Amstrad PCW8256/8512

If you're used to the original LocoScript, you'll be amazed how fast LocoScript 2 can be – moving around documents, jumping to a page, saving then continuing from your old position. LocoScript 2 has a huge range of characters it can print, including modern Greek, Cyrillic and many special scientific characters. You can use accents with any character, and even define16 special characters of your own. In addition, LocoScript 2 supports a wide range of different printers. It has a number of new features too: printing multiple copies; copying discs from within LocoScript; super new find and exchange. And of course, we've improved the manual out of all recognition!

Fewer Mistakes

LocoSpell is the spelling checker and corrector for LocoScript 2

LocoSpell is the ultimate spelling checker for LocoScript 2. Of course it works within LocoScript, so you don't have to swap discs or reset your PCW to use it. On a PCW8512 you can check your spelling against a 78,000 word dictionary, specially created for us by Longmans. But not only does LocoSpell find your spelling mistakes (and typing mistakes), it also can correct them! Every time it finds a misspelled word, LocoSpell presents you with a possible alternative. You can build and maintain your own private dictionaries too, as well as using the (SiC) feature to mark special words which are not spelling mistakes. You can also use LocoSpell just like a dictionary – if you are not sure how to spell a word, just look it up!

More Adaptability

LocoMail is the mailmerge program for LocoScript 2

With LocoMail you can write a letter once, then send personalised copies to all your friends or business contacts – anyone in a mailing list, in fact. Your data files can contain simple names and addresses or more sophisticated information, such as costs and expenses. There is a great deal of flexibility in how the data can be incorporated into your letters – each letter is reformatted to take account of the variable information you insert (no nasty gaps to reveal that it's a mailshot!) You can produce letters for all the names and addresses, or just a selection – automatically. You can even do arithmetic and write simple "programs". Whether you use LocoMail simply for a mailshot, or in a sophisticated way for invoicing, you'll wonder how you managed without it! Note: New packaging illustrated will be available late February 1988.

... and the fourth reason is the price!

LocoScript 2 *£19.95* ■ LocoSpell *£19.95* ■ LocoMail *£29.95*

Buy LocoScript 2 and LocoSpell together – *and save £5!*

To: Katy Buchan, Locomotive Systems,
Allen Court, Dorking, Surrey, RH4 1YL
Phone (0306) 887902

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- ☐ LocoSpell for LocoScript 2 £19.95
  requires LocoScript 2.03 or later, enquire for details of free upgrade.
- ☐ LocoScript 2 with LocoSpell £34.90
- ☐ LocoMail £29.95

Total _____

- ☐ I enclose a cheque payable to Locomotive Systems Limited
- ☐ Charge to my Access Card

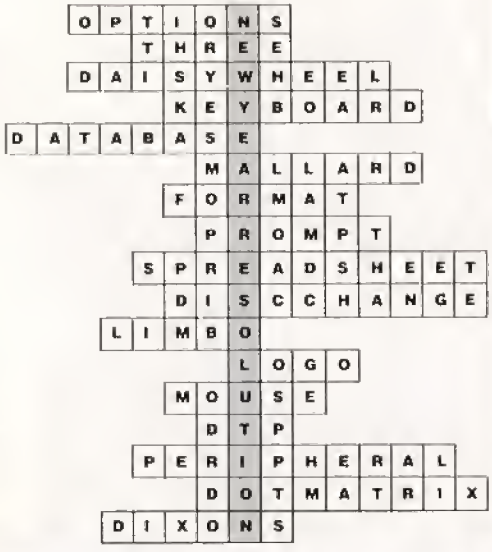
Note: All prices include VAT and UK postage. Please enquire for export terms.

Pitch in, printer winners

Two issues and a couple of thousand postcards on, the grand 8000 Plus/Panasonic Printer Competition has finally reached its 'paper out' indicator.

Of the 2,000 odd entries a totally unscientific sampling revealed that about 80% wanted the daisywheel and 20% the dot matrix, which presumably reflects the proportions of 8256/8512 owners to 9512 owners reading 8000 Plus. With great ceremony, the two winners were drawn. The daisywheel Panasonic KX-P3131 goes to Ms. Dawn Marsh of Runcorn, Cheshire, and the dot matrix KX-P1081 to Peter Riley of Brixworth, Northants.

Thanks to you all for entering, and Panasonic UK for providing the prizes. The correct answer was, of course, NEW YEAR RESOLUTION, with the rest of the grid as shown.



Subscribers' ProSpell

Locomotive systems have asked us to point out that according to some LocoScript 2 users the version of ProSpell provided free to new 8000 Plus subscribers a few months ago may damage LocoScript 2 documents. Loco 1 files are perfectly alright. Although a pukka ProSpell for Loco 2 costs £29.95, Arnor have kindly agreed to sell it at £5 off (ie. £24.95) to any 8000 Plus subscribers who wish to upgrade their versions (send some proof of ownership with all claims).

All right in the end?

Many is the time we have casually mentioned in these pages our Apple Macintoshes and swish desktop publishing setup at 8000 Plus. Unfortunately last month we were rather hoist on our own petard, and due to a technical error the very last lines of two items were missed off.

If you want your back-issue collection to make sense, add to the end of page 49 the line 'literature of the future'. And to the first column of page 87 add 'plug your book, why can't he plug his?' We assure you it'll never

CONSPIRACY OF SILENCE

Apart from being editor of 8000 Plus, I'm also a PCW owner, and like all owners I just can't imagine how I got along without it. It comes as a shock, therefore, when things happen which make me realise the extent of the ignorance about the PCW's potential that exists, particularly in the 'business' computing fraternity.

The specific instance that prompts this comment was a phone call from a reader who wanted to be able to use a Z88 portable word processor and transfer files to his PCW at the end of the day. Dixons, who sell both machines, told him categorically that it was not possible. In fact 8000 Plus ran a feature in issue 13 explaining just how to do it.

This episode highlights a fundamental problem with computer sales. No-one expects high street store sales staff to know everything about the machine – let's face it, if Dixons' salesmen were expert programmers they would be earning a lot more than they get for selling Hi-Fi in Dixons – but it's painfully obvious that some of them just haven't been briefed on the products they sell, and that's a fault with the store's staff training policy. Time and again we hear of professional computer dealers telling customers that the PCW can only run LocoScript and that for any other applications they have to buy a different machine; or that you can't hook up an alternative printer – prior to the 9512 they were resolutely saying that it was impossible to get daisywheel print from LocoScript.

Now I don't believe that dealers are as cynical as to deliberately sell someone an expensive IBM PC when they know very well that the customer could do with a PCW at half the price. I think there is a deliberate policy on Amstrad's part to sell the PCW as merely a typewriter substitute and push their PC as the flexible business machine. Dealers are only passing on the official marketing line, ignoring the wealth of really powerful PCW software.

So next time you are in Dixons buying some discs and you hear a salesman's voice drift over telling another customer to buy a PC instead, step across and have a quiet word.

Ben Taylor.

Immortal inputs

8000 PLUS

Thursday March 17th is D-Day for 8000 Plus's April issue – don't be a fool, reserve your copy now!

NewStar Software presents....

THE CATALOGUE

Software for PCWs and PCs

It's all in the NewStar Software *Autumn* Catalogue, complete with introductions and explanations to the various subject headings. Information to help you choose, presented in one complete catalogue.

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PCW meets PC

Many PCW owners use computers at work, or have friends with computers too. However, the most common business computer is the IBM PC. This doesn't use the PCW's CP/M operating system, but instead uses 'MS DOS' which cannot run CP/M software. Anyone trying to use a PC in addition to their PCW faces the Babel-like problem of moving their data or programs between their PCW and PC – different disc sizes, different commands, different programs.

Timatic Systems, a Hampshire-based software company, reckon they have the answer. They specialise in developing compatibility software and have just announced UNIDOS, a system which allows all your CP/M programs and data – ie. your database, spreadsheet, and all your customer information – to be used on your PC. The system works via a 'CP/M emulator', an add-on which allows the PC to behave as if it were a CP/M machine like your PCW.

It consists of a special card plugged into the back of the machine. Your 3" discs can then be read in an Amstrad disc drive, which is fitted on to your PC. The full system costs £349.95, for which you get the 3" disc drive for the PC and the UNIFORM and UNIDOS systems which emulate CP/M.

If you have a lot of data to be transferred regularly between your PCW and PC this could be very useful, though as it's strictly a *CP/M* emulator it doesn't work with LocoScript.

Timatic also do a data conversion service to convert 3" PCW discs to 5¼" PC discs and vice versa. You can only convert data files between machines in this way, not programs. The service costs £10 per disc.

Timatic also say they can provide software to connect the PCW to any other computer in the world – all you desktop publishers can hook your PCW up directly to your Macintoshes, for example.

Contact Timatic on 0329 239953.

Game over?

The future of the best-selling Infocom series of adventure games seems to be in jeopardy. Activision, the British distributors of Infocom games, have all but officially confirmed that the games, which are produced in America, are not now being sent over to them in the CP/M format that the PCW requires.

The problem seems to be a drop in sales of games on the Amstrad CPC machines. Being basically games machines the

CPCs had always produced the large quantities of sales that have made it worthwhile converting the games into CP/M format, which the PCWs also use. Amanda Barry, Activision's UK marketing head, said that although the conversion process itself is very straightforward, the newer breed of Infocom games require more memory than is available on CP/M machines. This means a lot of hard work if the game is be converted successfully.

Almost all CP/M computers nowadays are British Amstrad computers, so from the viewpoint of the American market games in CP/M format have apparently become uneconomic.

The old favourites such as *Hitch Hiker's Guide to the Galaxy*, *Leather Goddesses of Phobos* and the rest of the currently available games will continue to be marketed, but the newer Infocom games will only be converted to the more lucrative formats used by IBM PCs and the games-oriented Ataris and Amigas.

However, all may not be lost. Rumour has it that negotiations are currently under way by other interested parties to persuade Infocom to allow the CP/M conversions to be done over here and marketed in the UK. So maybe we won't be losing the games after all.

Infocom apart, Activision haven't stopped catering for the PCW, and the much-hyped Mind Fighter, an adventure set in post-nuclear holocaust Southampton, is to be released shortly.

Crossword solver

'Japanese banana goes backwards in France, we hear, perhaps (5,17)'. You know how infuriating it is to get stuck on crossword clues. You want a list of all five-letter words going blank, v, blank, z, blank – sounds like an ideal job for your PCW.

Now the answer to your dreams may have come from Bradway Software of Sheffield. 'WordFinder' is their new product with a dictionary containing 19000 words and 5000 names; you can search either for words fitting certain patterns, as above, or for anagrams – 'orchestra', for example, yields the celebrated transposition 'carthorse'.

You can even specify a string of letters and find the longest word which can be made up using letters from that string – ideal if you've got a PCW sneaked away beside your Scrabble board. WordFinder costs just £9.50 and is available from Bradway on 0742 350225.

Free your BASIC talent

The Mallard BASIC provided with the PCW is a powerful programming tool, but after a while some of its limitations become apparent. You can't draw high resolution graphics on the screen, the program editor is very primitive... should you look for a different programming language?

All this could change with the release of Lightning BASIC from CP Software. It's an extension to Mallard BASIC, so all the familiar commands you know are still there, but it boasts a host of add-ons which could revolutionise your programming. Plotting and filling circles and other shapes, better editing, timer and sound facilities, user-defined characters and debugging aids are all there. You can set up 'sprites' (figures you design and then move around the screen), which gives you scope to write your own arcade-style games in BASIC.

If you're looking for more flexibility in your BASIC programming, Lightning BASIC costs £19.95 – contact CP Software on 0993 823463 for further info.

LocoMail – a helpful sort

For LocoMail users, which includes all 9512 owners of course, there's only one thing lacking from the program – the ability to keep sorted into alphabetical order those name-and-address files you use in your mailshots. Now, however, Locomotive have written a program which will sort the data in a LocoScript file into alphabetical order. You can get it on disc for £9.95 from Locomotive in Dorking (0306 887902).

Careerwoman of the year?

Nova Fisher, a partner of Exeter-based Minerva Systems and chairperson of the new company Minerva Computers, is in the running for the title of Young Career Woman of the Year.

This is a contest run by the Business and Professional Women's Association and the National Westminster Bank to find the most level-headed entrepreneurial woman heading a small business, and so far Ms Fisher has made it through her area heat in Exeter and has now to negotiate the South West Regional final on her way to the national finals in London.

Minerva Systems, which Nova Fisher founded with partner Barry Stearn, is best known in the PCW world for its range of 'Learner-Friendly' software, as they call it, including the First Base database and First Calc spreadsheet. However, Minerva's main business is in the Acorn market, and they have recently taken a gamble on the success of the new £1,000 Archimedes computer by investing massively in producing a range of software for that. Their most recent venture is opening a computer shop in Exeter.

Vital organiser

The Desktop Organiser market seems to be taking off. Hot on the heels of Kempston's Jeeves, which we reviewed last month, WIMOS is the latest program aiming to rid your PCW work-desk of all those memos, notes and telephone lists. The difference this time is that it doesn't need an expensive mouse to operate.

WIMOS (another one of those cheery computer acronyms which stands for Windows, Icons and Menu-driven Organisation System) is new out from Digital Software Systems. It claims full disc management facilities (file copying etc.), a mini word processor, graph- and chart-drawing functions, a telephone address book, and a calendar.

For C and Pascal programmers, WIMOS also has a program developer allowing you to run and, if there's a problem, instantly examine and debug your program, just as you can with BASIC. All this plus a variety of utilities such as an alphabetical sorter, a protected BASIC listing unprotector, a clock, and a word finder to help you do those puzzles in the tabloids.

It is, Digital Software Manager Brian Heys claims colourfully, like a magician's top hat, from which you can pull out any number of rabbits. Continuing the furry mammalian theme, he reckons that it has been specifically designed to run on keyboard only, and is actually easier to run without a mouse.

WIMOS costs £39.95 and is available from Digital Software on 0254 888107.

BASIC memory

Hands up if you have forgotten the difference between SPACE$ and SPC in Mallard BASIC. And hands up if you can't find your BASIC manual. Well the answer to your problems may be in a new utility from CBS Services of St Ives in Cornwall. They are about to launch Jumbo - a disc aimed at answering all your questions about BASIC commands, escape code functions and much, much more. It comes in the form of either a single or double density disc with over 200 files giving you a quick run down of each command and its syntax. The idea is that while you program you can leave the disc in the drive and call up details at any time by simply calling the relevant file to the screen. Most have simple examples to show how the command is used.

CBS are offering Jumbo for under £14.95.For details phone 0736 794422.

Colour my world

Fed up with monochrome graphics? Why not print out your Masterscan and Masterpaint works of art in colour? Colour ribbons are available for dot matrix printers but the problem is knowing how to put those different colour sections together. Streamside Research have brought out a tutorial discs for £5 to show you how to prepare colour pictures using Masterpaint and Masterscan, and if there's enough demand they say they'll convert the program for other graphics packages such as Newsdesk and the Desktop Publisher. Details from Streamside, 2 Rosary Drive, Bridgwater, Somerset TA6 7JS.

▲ A 4-colour printout from MasterPaint. For those of you reading in black and white, the green is the colour beside the red

Spare part surgery

The one disadvantage with buying your PCW as a complete ready-to-go package complete with printer, software discs, etc, is the dread of what happens if anything goes wrong. Every few days we hear the tragic tale of some poor soul whose son stuck his marmalade on toast into the A drive, or whose cat did something unspeakable to the printer. Getting replacements can be a real worry.

'CPC' of Preston have just released their 1988 catalogue, and they claim to be the only authorised dealer in spare parts for Amstrad. For example, you could buy a new printer mechanism (£33.53), a new print head (£26.82) or a new monitor (£45.00) or CPU board (£45.00). Or how about new disc drives (£53.65 A, £89.41 B), all plus VAT of course.

Some items – printer parts, drives and monitors etc. – are only available by exchange: you send your old damaged one and they send a new one. Other goodies are new systems discs (£9.95 each) and manuals, and even the service manual for the 8000s (£8.00) for all you electronic engineers.

Further details from CPC on 0772 555034.

Over the moon

How good are you at headers? Not the ones at the top of pages, but the ones which rocket past hapless 'keepers while the defence are literally left for dead. As they say, football's football; if it wasn't, it wouldn't be the game that it is.

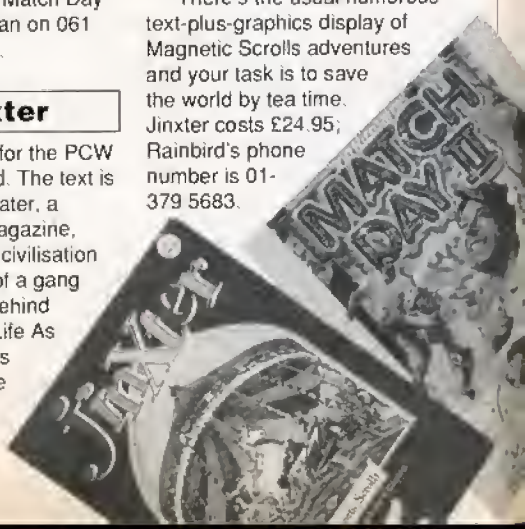
The old clichés never change but Match Day, the arcade soccer game from Ocean Software, is now available in a new version. Match Day II allows you to play against the computer, against a partner, or play with a partner against the computer. You move your seven players around the pitch and can pass, shoot etc., and there's even a heading and volleying option.

Written by the authors of Ocean's highly-acclaimed 'Batman' and 'Head over Heels', Match Day II is available from Ocean on 061 832 6633, price £14.95.

High Jinxter

The newest adventure for the PCW is Jinxter, from Rainbird. The text is written by Michael Bywater, a contributor to Punch magazine, and you've got to save civilisation from the deadly perils of a gang of Masons beavering behind the scenes to destroy Life As We Know It. "A hilarious and sophisticated satire on all those dumb computer-game conventions you love to hate," the publicity reads.

There's the usual humorous-text-plus-graphics display of Magnetic Scrolls adventures and your task is to save the world by tea time. Jinxter costs £24.95; Rainbird's phone number is 01-379 5683.



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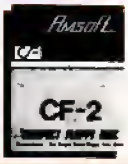

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HARD DISCS, EASY LIFE

Do they make the world your oyster or are you putting all your eggs in one basket? Alec Rae mixes some more metaphors to find out.

Imagine virtually every program you use, every piece of writing you want and every item of data you need on one disc. You are thinking about a hard disc. Instead of hundreds of little 3" discs littering your desk you could have a box (which also doubles as a handy monitor stand) containing up to 20 megabytes of computer storage space – equivalent to both sides of 56 discs on an 8256, or more than 28 discs for an 8512 or 9512.

Commercial programmers work for hours trimming fractions of seconds from the operation of their programs and yet the user will probably sit for quarter of a hour looking for the right disc and then loading it. People using large database files would find it invaluable: instead of having to change discs dozens of times you can have all the information you want in one massive file available all the time you are using your machine. Instead of searching through piles of wrongly labelled discs for your letter of application to join the Foreign Legion you are able to call up any one of more than 2000 files or programs within seconds of starting your computer.

There is no need to copy your favourite utilities or programs into the M drive each day – they are all sitting waiting for you on your hard disc. More importantly it can save you even more time by speeding up all the file handling activities. Everyone knows the moments when programs pause for 5 seconds while the the disc drive whirrs and red light blinks – with a hard disc those moments are considerably shorter.

How big is it?

It is difficult to gauge just how much space you have to play with on a hard disc. It certainly should be a while before you hit a disc full error message. But if you wanted to you could keep the whole of the Bible (773,692 words) on a 10Mb hard disc and heretics would still have room to rewrite it again if there were bits they didn't agree with.

Disadvantages?

So what are the disadvantages? For a start, a hard disc may well cost as much again as your PCW. Even taking into account the fact that you will be saving yourself the cost of perhaps 56 three-inch discs (£150 or so), you will still be out of pocket by a fair amount of money.

There is also the worry about what happens when things go wrong. It is bad enough when something happens with an ordinary disc, but what would it be like if your life's work disappeared as a hard disc crashed?

Fortunately, this is not very likely to happen – unless you do something silly like dropping them. hard discs are far more robust and less likely to be damaged in normal operation than ordinary floppies. Even so, it does make taking back-ups very important. Although there are utilities to recover files from a damaged disc there is no guaranteed way of recovering data. And anyone who has tried to find their way round a 173k disc using disc recovery utilities like *The Knife* will know how complicated that is. Just think what it would be like on a 20,000k disc.

One problem with hard discs is that you might get swamped with filenames – imagine doing a DIR and seeing 2,000 entries flash past you on the screen. Luckily hard disc manufacturers have taken this into account and normally allow you to divide the hard disc up into sections. These act like completely different drives. Instead of just drives A,B

and M you can have drives C, D, E and F and on some discs G and H too. The various drives on your hard disc share the space available, so you might have one C drive of 20Mb, four 5Mb drives called C, D, E and F, or one 10Mb C drive and five 2Mb D, E, F, G and H drives.

Lastly, but important to some, unlike floppies hard discs always have their disc drive motors on, and often a cooling fan too, so there is a constant humming noise. It isn't loud, but may be disconcerting at first.

Making CP/M do the hard work

To organise the large amount of space you have available on a hard disc you are best to learn a few simple techniques to make life easy. The first and most useful is the idea of user groups. This is a way of dividing a disc into 16 different sections – if you think of the disc drive as a filing cabinet, then the user group is a drawer in it.

When you see the A> prompt this means that you are in group 0 in the drive (with typical computer logic you number the user groups from 0 to 15). Just type `USER 1` or `1:` and you will see the prompt change to 1A>.

This is just the same as moving into another group in LocoScript, and the section is completely self-contained. Type `DIR` for a directory and only files saved in that group will show up. If you type `ERA *.*` to erase everything you will only erase the files in that group.

This means that with a little bit of organisation you can divide up your files neatly between the different groups. You are also able to move files from group to group using PIP – in order to do this just put in square brackets `G` and the group number after the disc drive letters in the command. For example, `PIP C:[G1]=D:[G0]*.BAS` will move all your BASIC programs from group 0 on your hard disc drive D into group 1 of drive C.

While user groups are invaluable there are still one or two problems that can arise. A typical example of such a problem occurs when you want to load BASIC to run one of your newly moved programs in group 1. If BASIC.COM is in group 0 you will be greeted with the friendly message BASIC?, which is CP/M's idea of the best way of telling you that it can't find the program file BASIC.COM, since CP/M normally only looks in the current group for any .COM files you want to run.

Instead of having to copy all your .COM files to every user group where you might want to use them, what you have to do is make BASIC.COM (or DIR.COM or PIP.COM or any utility you use regularly) a *system file* in group 0 of the disc drive. This is simple enough if you have the utility SET.COM on your disc: just type `SET BASIC.COM[SYS]`. If CP/M can't find the file it wants in your current user group, it looks in the system files in group 0.

If you then ask for a directory of files, system files will not show up but instead you will see the cryptic message SYSTEM FILES EXIST after the normal list. Type `DIRSYS` and all your system files will be shown. If you then want to copy a system file using PIP the PCW won't be able to find it unless you add the letter [R] to the command – as in `PIP M:=C:BASIC.COM[R]`.

A final CP/M command exists to make life with several disc drives easier. If you keep everything in drive C, then when you are logged onto drive M you have to remember to type `C:PIP` whenever you want to run PIP. It gets tedious remembering the drive letter every time.

The SETDEF command gets around this – you can tell CP/M that whenever you give a command it is to look first on one disc, then on another, then on your default disc. Once you've typed `SETDEF C:,*` then the PCW will look for your COM files first on the C drive, then on whatever drive you are logged on to (the * means 'default drive').

User groups, system files and SETDEF are all normal CP/M commands that you could use with a floppy disc, but it isn't until you get a hard disc that they become really useful.

Hard discs and LocoScript

Since LocoScript is notoriously idiosyncratic, you might suspect that there are problems using a hard disc with it. Fortunately, however, Locomotive Software have written a special hard disc version that is shipped with the ASD and Timatic discs.

Once running, all the drives on the hard disc are available normally, with the exception that the Disc Manager Screen can't show more than three discs at a time, so you will have to scroll horizontally to get to the M drive and others beyond C.

One problem is Limbo files. When you erase a file or save a file that already exists, the old file is whipped off to 'Limbo'. This is actually one of the CP/M user groups that

Clever PIP

When making back-up discs of your files the greatest aid is the [A] or 'Archive' option on PIP. If, for instance, you type `PIP a:=c:*.*[A]`, the PCW will only copy new files and files that have been modified since the last time you backed-up your files.

Software on hard discs

Before coughing out a lot of money for a hard disc it is probably best to ensure that your favourite software can cope with more than the normal drives available on the PCW. As most software has been written with only the A, B and M drives in mind it is not necessarily true that you will be able to easily run any program on drive C for instance.

We haven't been able to test every single piece of software on the market, but of the more popular packages these ones will work with a hard disc: Protext, SuperCalc2, BASIC (and most programming languages), NewWord, AtLast, MasterFile 8000, dBase II. Stop Press runs on the ASD discs and ACC discs, but not Timatic.

These ones won't make full use of the hard disc: Sage Accounts, Mini Office Professional, The Desktop Publisher, MasterPaint/Scan, any games or programs that are on self-starting discs (ie. don't run from CP/M files).

Some manufacturers can supply special versions of their software. For instance, the hard discs come with a special LocoScript for you to use (your standard version won't work); Connect Systems' Money Manager Plus won't normally accept drive C as a valid drive, but a hard disc version is available.

cp software

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CLOCK CHESS 88 IS COMPATIBLE WITH ALL PCWs £15.95

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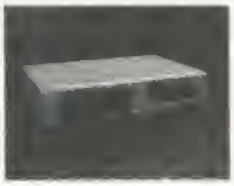
don't normally show up in LocoScript. The LocoScript disc management screen only shows the first eight groups (0-7) so any file erased in group 0 is moved to group 8, anything erased in group 1 goes to group 9 and so on.

Normally LocoScript will save these until the disc fills up when it will discard them as necessary. For hard discs that could cause a lot of problems, since CP/M will see 20 megabytes of old files and think the disc is full. To cater for this problem, the hard disc LocoScript limits the amount of space in Limbo to about one megabyte. Even so, it's a good idea to use the disc configuration programs to reserve a special drive for LocoScript's exclusive use.

If you are using LocoScript, it's as well not to configure the hard disc to have six drives, since whenever you get to the Disc Manager Screen it will take an age to look up and list all files on all discs.

PCWHD10 and PCWHD20

£343.85 and £534.75 ● ASD Peripherals (021-359 0981) ● All PCWs



When you set up the ASD hard discs you really feel there has been a bit of thought put in to helping you through the difficult stage of getting introduced to your hard disc.

The pack comes with everything down to a screw driver to change the plug. You plug the PCW into the back of the hard disc, and then the hard discs into the mains so preserving Amstrad's 'one plug' philosophy. There is a simple install program that sets up your Start of Day disc and the LocoScript starter disc automatically.

The ASD discs come in neat grey boxes (near the 8512 colour of grey) with the on/off switch placed sensibly enough at the front. It is connected to the PCW by a box fitting into the expansion port on the back of your PCW. If you want to add any attachments such as a mouse or a serial interface, they can be fitted on to the back 'piggy-back'.

The first thing you will notice about using the ASD hard disc is that it will ask you what the date and time is. This is because the software automatically date stamps every file. By using the command `DIR[FULL]` you will get a list of all files on the disc, their size, the date they were created and the date they were last used.

This allows you another way of finding the file you are looking for and more importantly it helps you decide what files you can erase from your disc by showing you how seldom you use them. You can disable this time-stamping if you want.

Normally, the whole capacity of the disc is available to you as drive 'C'. However, you can arrange to split it up into six different drives, 'C' to 'H' with a special configuration program. This program is designed to be foolproof, and to be sure there is little chance of you allocating an inconsistent amount of space to one drive, but the number of option you have to set (size of drive, directory space, block size) makes it confusing to the beginner.

There are one or two interesting extras on the ASD boot-up disc. Most important is BADBLOK which checks through the disc for any 'bad blocks' (where there would be corruption). With a floppy disc, if a track becomes damaged, so you get 'Missing Address Mark' errors or similar, you throw the disc away and use a new one. With £300-a-time hard discs this isn't the ideal solution, so if BADBLOK finds any duff tracks it fills the space with a spurious file so you cannot put important data to this block and therefore should not face disc problems.

It also comes with a couple of public domain programs – SPOOL, which allows you to print a file in the background at the same time as you get on with running another program, and SHELL which gives a more friendly face to CP/M by presenting a LocoScript style menu directory of a disc.

The ASD hard discs come with whichever version of CP/M and LocoScript you need for your PCW – ie. LocoScript 1 for 8000 series owners and LocoScript 2 for 9512 owners. A hard disc version of Loco 2 for 8000 owners is available for £19.95.

PCWHD10 and PCWHD20

PLUSES
- Works with LocoScript
- Low cost 10MB version available
- Some good utilities provided, eg. automatic date stamping of files
- Most flexible (up to six drives)
- Only one mains plug needed for disc and PCW

MINUSES
- Quite complicated configuration procedure.

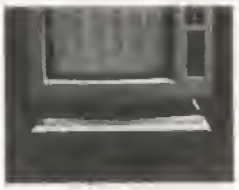
RANGE OF FEATURES ■■■■■ PERFORMANCE ■■■■■
EASE OF USE ■■■■■ DOCUMENTATION ■■■■■

8000 PLUS VALUE VERDICT ■■■■■

▲ The configuration screen for splitting the ASD disc into up to six parts.

WINCHESTER EXPANSION BOX (20MB only)

£573.85 ● Timatic (0329 236727) ● All PCWs



Setting up the Winchester Expansion Box (WEB to its friends) is certainly simpler than setting up the ASD hard disc but it is less adaptable. You simply choose between one and four drives on the disc, and the 20 MB is split equally between them.

The WEB casing is slightly larger than the ASD and comes in a beige colour that tones in well with the 9512 colouring. The on/off switch is hidden at the back and there is no facility for chaining the electricity so two mains plugs are needed. It also means that you always have to remember to switch on the WEB before you switch on your PCW (the manual warns this can damage the PCW), a problem you don't have with the shared-power ASD disc.

It attaches to the PCW expansion port by an edge connector and instead of a 'piggy-back' arrangement there is a special expansion port on the back of the hard disc – a supremely sensible solution which means that you can have one or two attachments fitted without the PCW falling over backwards under the weight of boxes. However, be warned that the AMX mouse (eg. as used with the Stop Press DTP) won't work off the WEB expansion port.

The manual is short and informative although there are one or two peculiarities that could cause a moment of disquiet. For instance, when telling you how to use 'System' files, it suggests you make several totally useless utilities system files.

One disquieting aspect about the WEB which happened to our review model – although Timatic assure us that it doesn't normally happen – is that it seemed poorly protected against mains surges. Unplugging another electrical device from our 4-way extension lead caused the PCW to crash.

Why 'Winchester'?

Hard discs are often referred to as 'Winchesters'. This is because the technology was developed by IBM at their Winchester research laboratory – in Winchester America, not Winchester Hampshire though.

WINCHESTER EXPANSION BOX (20MB only)

PLUSES
- Works with LocoScript
- Simple configuration procedure
- Separate PCW expansion port on hard disc itself
- Fastest operation

MINUSES
- Most expensive hard disc

RANGE OF FEATURES ■■■■■ PERFORMANCE ■■■■■
EASE OF USE ■■■■■ DOCUMENTATION ■■■■■

8000 PLUS VALUE VERDICT ■■■■■

There is no automatic date stamping although you can do this yourself with the CP/M utilities DATE and SET. However, there is a special Archive program, to help making backups of your hard disc. While quite user friendly it doesn't really come into its own until you are dealing with massive files that cannot go on to one floppy disc – you can save two-megabyte database files on several discs and put them all together again with ARCHIVE. Since ARCHIVE insists on automatically erasing all files on the disc it is backing up on to, you are normally best off using PIP for backups.

Also provided is SWEEP3, a version of the public domain facility NWSWEEP which allows a simple method of tagging and transferring files. Unfortunately there is no documentation for it but it is reasonably easy to find your way through.

Timatic, like ASD, provide the Locomotive-approved versions of CP/M and LocoScript for your PCW.

ACC HARD DISC (20MB only)

£458.85 ● ACC Computer Services (0745 826234) ● All PCWs

The ACC hard disc is the cheapest of the 20 MB models, and as you might expect has the fewest 'frills'. In fact this makes it the easiest to get to grips with, since you aren't confronted with many options when setting it up. However this makes it considerably less flexible than the others.

The main area of difference is that this disc does not allow you to use LocoScript, but only CP/M programs. Instead of providing you with a special hard disc version of CP/M, as ASD and Timatic do, you use the one from your standard CP/M disc and run a special program to make the hard disc register (this takes up 2k of the usual 61k from your CP/M workspace).

Presumably as a sop to the absence of LocoScript, ACC provide a copy of Tasword to handle your word-processing needs. If you are a LocoScript fan you may find this a problem, as Tasword is unlikely to be considered an improvement by regular LocoScript users.

The other main limitation of the ACC disc is that you can only configure the disc to have two drives, C and D. It comes pre set- up for these to be 10 MB each, unlike the others where there is a configuration process where you choose the number and size of drives. Using the user groups means that you can still divide up the the disc into 32 sections but it also means considerably less flexibility than its rivals

The drive was designed, so ACC say, for applications in the National Health Service and the designers have put an emphasis on robustness – it's a very solid and heavy box!. It comes in a cream and black steel frame with a drive support frame which includes a double anti-shock mounting. It certainly looks 'space-age' with a fancy ACC logo on the front and blinking coloured lights.

There is a Backup utility provided which, as with the Timatic disc, is best left for files that need to go on to more than one disc when backing up, with PIP for everyday files. Curiously, formatting the disc doesn't seem to completely clear all the directory tracks so you are sometimes left with some spurious filenames afterwards.

The documentation, although cheerily written ("Hi! My name's John, congratulations on your new purchase," it begins) doesn't give any instruction on how to use CP/M with your hard disc, such as the User Groups, System files and SETDEF commands mentioned previously.

ACC HARD DISC (20MB only)

PLUSES
- Simplest to set up
- Cheapest of the 20 MB models
- 'Free' Tasword word processor

MINUSES
- Doesn't work with LocoScript
- Doesn't use the officially approved hard disc version of CP/M
- No documentation about using User groups etc.

RANGE OF FEATURES ■■■■■ PERFORMANCE ■■■■■
EASE OF USE ■■■■■ DOCUMENTATION ■■■■■

8000 PLUS VALUE VERDICT ■■■■■

Time trials

All the hard discs we tested did the job of storing and retrieving files quite happily (except for LocoScript with the ACC disc), the only difference between them was how fast they could access the data. We did a couple of time trials on all the discs, and for reference also on ordinary floppy discs and the PCW's M drive (which gives the fastest possible file access time). These don't pretend to be rigorous tests, but give you some idea of the speedup you might expect in practical use. The first test timed how long it took to scroll through a long document in LocoScript 1, and the second how long to copy all the files on the main CP//M master disc of an 8000 series PCW using PIP. All timings are in seconds, and all the hard discs tested were the 20 megabyte versions:

	Loco 1 scrolling	PIP file copying
ASD (C to D)	143	62
Timatic (C to D)	156	52
ACC (C to D)	n/a	66
A to B	198	143
M to M	141	32

Which one's for you

All the discs tested worked very well. They were simple to set up, and made all aspects of the PCW's operation faster. Whether you want to pay this kind of money for a convenience aid is up to you, but for business users in particular hard discs must be highly recommended. After all, some *programs* running on IBM PCs cost several hundred pounds.

For the average user, the ASD 10 MB option seems the best bet. It's over £100 cheaper than the next model up and, frankly, affords quite enough space to work in. If you are running a business with many different programs and data discs, you may find a 20 MB disc useful. The ACC disc works fine for CP/M programs, and is the cheapest, but can't manage LocoScript at all. If you might need LocoScript, the ASD or Timatic discs are better bets.

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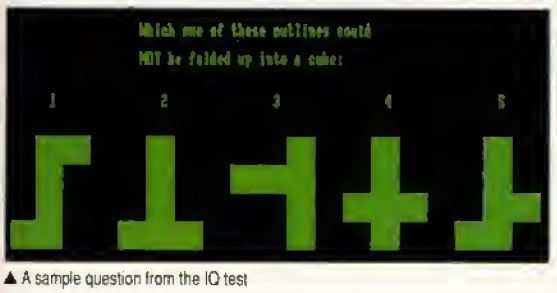
The real meat of the program is a series of five IQ tests. Intelligence Quotient tests have been under attack for some time (mostly from people who didn't get into MENSA) but there is still a fascination in finding out whether you might be a genius or not.



▲ A sample question from the IQ test

If you are interested, but don't want the embarrassment of showing how low your IQ is when there are people about, a computer test is probably the scientific way of doing it. The computer asks the questions, marks in exactly the same way each time and keeps track of time accurately (always a problem with self testing). You answer 32 questions each time with about 30 seconds to answer each. You cannot save time by answering one question quickly and moving on to spend more time on another and five seconds before your 30 seconds is up the machine bleeps to tell you to make a guess.

Drunk disc driver

Another section of PEP, interesting in these Don't-Drink-and-Drive days, is the test for effects of alcohol. You are tested on how accurately you move the cursor around the screen following a randomly moving target. When you start you type in how much you have had to drink and then it keeps a record of how badly you did. The test only goes up to the equivalent of eight pints of beer, presumably on the grounds that you won't be able to find your PCW after that.

Slightly less emotionally draining are the tests for stimulant effects. This shows the difference in your reaction times when you are under the influence of drugs (travel pills, medicines and caffeine that is). The effects of the 8000 Plus coffee were worse than alcohol.

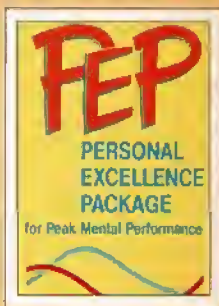
Or if you really want to make an impression at a party you can take along the print-out of the results of your *Circadian Rhythms* test (how your reaction times alter throughout the day). This means testing yourself at different times of the day to see when you are at your most efficient.

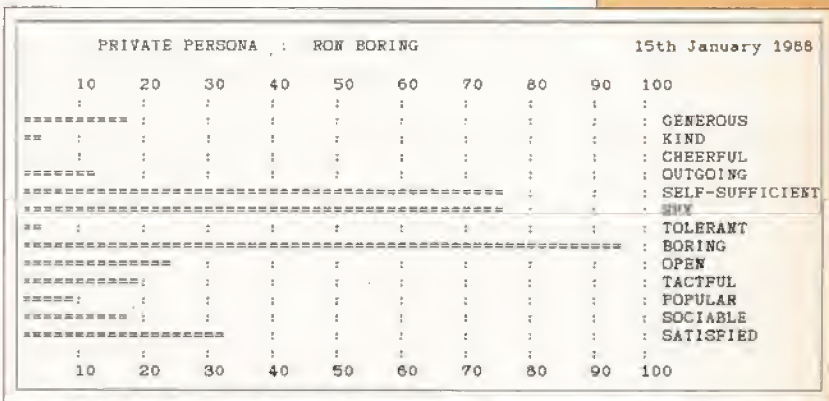
The real you

The real fun starts when you get into the personality tests. There is a test of your public life – how you act in business and private life – and how you are socially. You are asked a series of 100 questions about your views on life with which you have to strongly agree, agree, disagree or strongly disagree. You are supposed to answer without thinking about it too deeply.

This is where it falls down. Clever people like PCW owners can usually guess the way the questions are leading and know what the 'right' answer is to get the result they want – for example to show them as generous, witty and popular. Still, it is a bit of fun to discover how boring or forceful the PCW thinks you are. We did manage to get it to be quite rude (with quotes like "others find you tiresome" and "you are a difficult person to like") but you would need to be exceptionally 'honest' to read any truth into these. You can print out the findings along with the results in the form of a graph as you can do with most of the results generated from the tests.

Tacked on the end is a typing test which checks your speed and accuracy. This, it has to be admitted is a bit of a con as Iansyst have taken the opportunity to shamelessly plug their typing tutor program. We got up to 75 words per minute and, while admitting the typist was good, it still suggested taking a Iansyst course! EXIT





▲ The result of the editor's personality test with PEP

PLUSES

- Almost scientific and non-embarrassing way of testing your IQ
- Can show interesting insights into your efficiency at different times of the day.

MINUSES

- Relatively short span of interest
- Personality tests can be easily fiddled

RANGE OF FEATURES	■■■□□	PERFORMANCE	■■■□□
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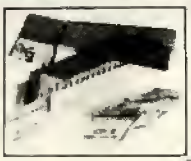

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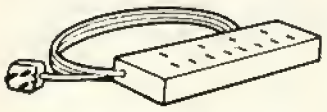

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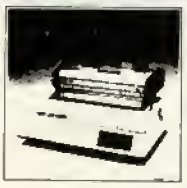

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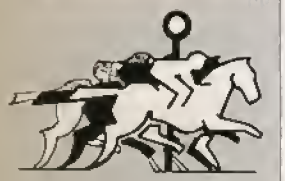
Trevor Haydon backs a program to give you the edge over bookies



PRO-PUNTER

£57.50 ● DGA Software (PO Box 36, Ashton-under-Lyne OL7 9AJ) ● All PCWs

People get understandably sceptical when other people write computer programs telling them how to make money. When the program involves picking the winners of a horse race the scepticism tends to get a bit coarse, but if initial results are anything to go by then DGA's Pro-Punter seems to confound the sceptics.

How can something as seemingly arbitrary as the outcome of a horse race be predicted from the ruthlessly logical goings-on of a bit of BASIC? Well, put simply, it helps eliminate the gambling element. After all, the bookmaking fraternity are the blokes that lay the odds, and the odds are invariably less than the horses' true chances of winning. They don't mind paying out now and again because long term they know that the mathematics are on their side.

This is where Pro-Punter comes in. Not only will it tell you the most likely outcome of a race and calculate the true odds about the probable result, it will also single out those events where the combination most advantageously occurs. Armed with this information, and betting only when all such factors are firmly in place, it would be very difficult not to come out on the right side over a period of time. You will have effectively replaced the gambling element with soundly based probability theory.

The opposition

The only similar program available on the PCW is Selec Software's "Coursewinner", which is considerably cheaper at £18. However, Pro-Punter analyses past form in a great deal more detail than Coursewinner, and in tests genuinely seems to give better predictions (as it should)

Starter's orders

All Pro-Punter's required input data has to be obtained from one of the sporting dailies, since the range of inputs is not covered by the average newspaper. For the newcomer to the racing scene, finding one's way around the sporting press may prove more difficult than operating the program, since without some background knowledge of the terms employed it can take on the feel of a kind of equine Esperanto! Once over that fence, however, the approach is perfectly straightforward, the program's operation being covered by a series of self-explanatory menus. The program itself is kept on a self-starting disc, with a further 'library' disc reserved for the regular update of trainer and jockey form for each of the respective courses.

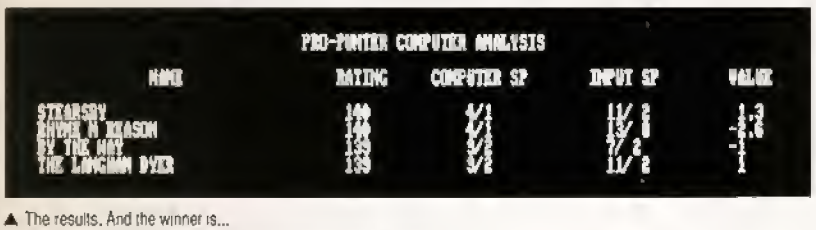
Once the names of the actual runners are entered the prompts start to quiz you concerning the past and present form of each horse, whether they have previously run against each other and the current form ratings and speed figures. It should be said that all this takes some time to enter (30-40 minutes, depending on the runners), but frankly I would have been suspicious of anything less. To deliver the kind of goods this program promises is inevitably going to make demands on the user. You can't have it both ways.

With the data entry finished, Pro-Punter starts to weigh the odds. The current race conditions are compared against each runner's previous winning outings, suitability – or lack of it – being assessed in terms of a final numerical rating. All this may take several minutes to compute.

The final results are printed in a table which contains just about everything the discerning punter needs to know in order to assess the true chances on offer. The most likely winner will be shown as top rated – but even more importantly the calculated true odds are displayed alongside. More often than not it will be found that the odds on offer are far below the true odds, which means that you are at a distinct disadvantage in betting – whatever the outcome.

▲ Inputting past form expects exhaustive details

The program advises when the conditions are exactly right, and by adopting the kind of patience required (genuine opportunities don't crop up that often) rewards in the region of around 65% winners can be expected, if past results are anything to go by. Where the program advises against betting it will also tell you why.



▲ The results. And the winner is...

The proof of the pudding

DGA have "proofed" their results to all of the leading sporting journals – in one case over an entire racing season – and my personal efforts to date bear out their advertised claims. It should be said that such claims are not based on every race but on those events most likely to favour the established form of the runners. The manual covers this aspect briefly, but unavoidably there is little doubt that the more background knowledge you have in this respect the more successful you will be.

What are its faults? The method for assessing the handicap value for past races seemed unnecessarily time consuming – and some may find the package as a whole a little on the pricey side. On the basis that you only get what you pay for, Pro-Punter is fair value – given the necessary patience and temperament, it could turn out to be one of the easiest ways of making money without getting arrested. EXIT

PLUSES

- Best attempt yet to apply probability to racing odds
- Analyses past form in real depth
- Used properly, over 60% winners possible
- Advises you when not to bet too!

MINUSES

- Entering the race data is time consuming
- Expects the user to be a serious racing fan

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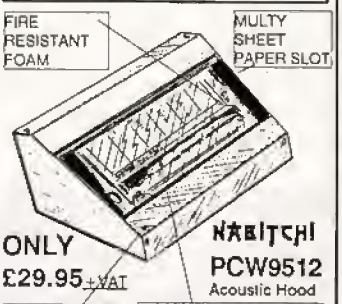

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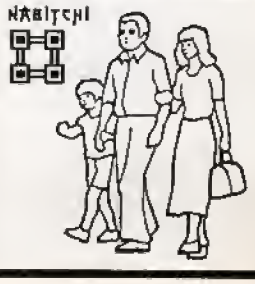


ATLAST – THE SEQUEL

Haven't you got a database yet? If not, Rob Ainsley looks at the revised version of AtLast

ATLAST PLUS

£39.95 ● Rational Solutions (056681 511) ● All PCWs

Computerising your club or company records or the bibliography of your thesis could be one of the most time-saving investments you will ever make. Being able to produce sorted, up-to-date membership lists at the touch of a few buttons, or search for, select and print out twenty out of a thousand employee records in seconds makes progress sound quite good after all. AtLast has been well designed to cater for needs such as these.

It comes with a set of installation programs for 8000 and 9000 machines which make self-starting discs for you. Once started, your first task is defining your database. However, before you get to do this – setting out the name and address slots, etc. – you find yourself working on a file called SYS-CUST. If you haven't spent an hour or so reading the manual it's not obvious what all this is about and may well be very confusing. In this file is stored various details of serial and constant fields, if desired. Serial fields are just record numbers – the first customer you type in can be automatically assigned the number 1, the next 2, and so on. It's the easy way to keep unique reference numbers for everyone.

Jargon buster

For the uninitiated, database programs use a bit of jargon. If you think of a traditional card index box, then the whole box is the database, each card is a 'record', and each line of information on a card like someone's name is a 'field'.

Constant surprise

Constant fields are space-savers for often-repeated items of information. For example, suppose you want to put a description into each customer's record, 'individual', 'club', 'company', and so on. Typing each word for each record would quickly get tedious and lead to mistakes. However, if you define three words INDIVIDUAL, CLUB and COMPANY in this SYS-CUST file as 'constants', you can insert the appropriate words into each customer record as you type it in just by typing the first letter or two.

There is a good selection of types of field to make sure that your data items of different types are properly handled. 'Fixed', for example, is ideal for amounts of money, as you can specify that exactly two digits must come after the decimal point. 'Date' ensures that dates will be stored in a consistent format and so will be indexed properly.

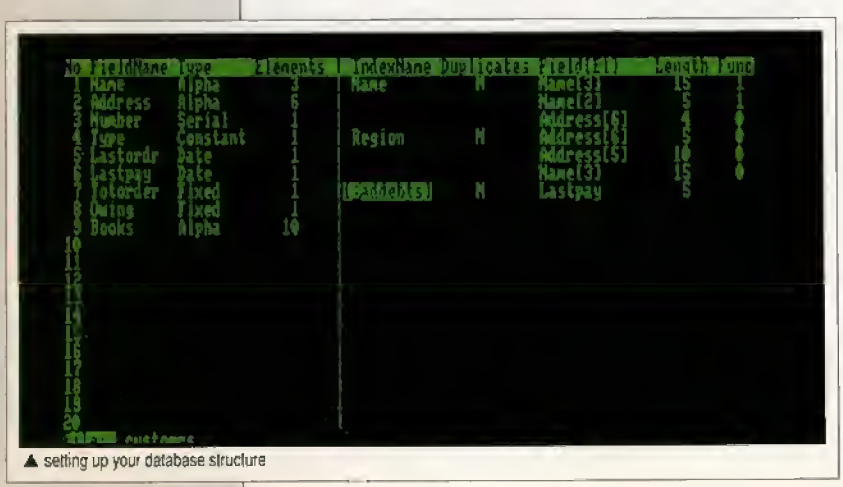
Having set up your fields and specified the lengths, you then define your indexes. You can have up to five indexes for each database, ie. you can ask that the records be listed out in any one of five different orders (surname, amount owing, postcode and so on).

No trouble with names

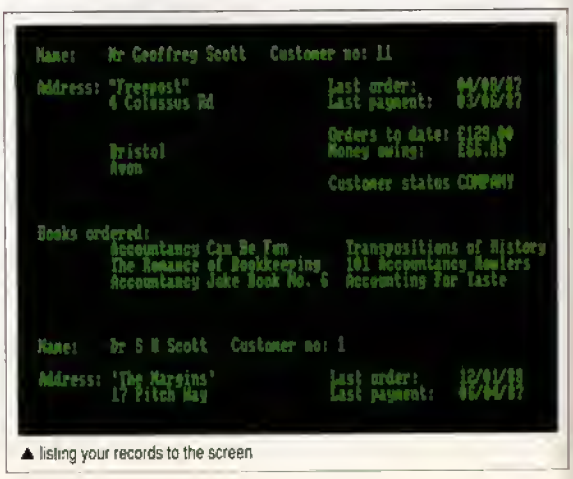
When you think that 95% of database work involves name-and-address lists, it's strange that better provision is not generally made for handling these items. Obviously you want your names sorted into order by surname, but you probably want them displayed as 'Dr S. Scott' rather than 'Scott, S, Dr' for instance.

Name and address handling is one of the best features of AtLast: you can define your records as 'arrays', so that 'Name' can have a number of elements – Name 1 can be the title, Name 2 the first name, Name 3 the surname etc., and you can choose to index by the third element, while displaying the elements in the conventional order. Similarly, your 'address' field can have several elements, indexed perhaps by 'county' (element 6) or town (element 5).

To cope with your 5,000 customers called 'Jones' you can define secondary and tertiary indexes – eg. 'index by surname first, then by first name, then by county'. A 'duplicate?' option lets you choose whether identical index entries are allowed; for a name index, you'd choose 'no' to ensure two people's records could not be confused, but for other indexes – say an index sorted on amount owed to you – duplicates are clearly OK.



▲ setting up your database structure



▲ listing your records to the screen

Field work

After defining the structure of your database you set out the form of how the fields are arranged on screen and printout. You can make up as many as you like – you could have one for your accounts department, another for your ordering department, one for printing name and address labels, etc. Fields, page headings, item headings and so on can be put anywhere on the page or screen. You can get AtLast to close up blanks so that for example, title, first name and surname won't be separated by acres of space, but only on printout.

Data can be typed in at the keyboard or 'imported' directly from an external file, so if you have some details stored systematically in a LocoScript file you won't have any retyping to do. Once your data is entered you can do all the things you'd expect from a good database – you can sort it into order according to any of the indexes you defined when setting up your database, and you can select records by placing conditions on one or more fields. The last facility is one of the most powerful parts of a database program and AtLast does it well: you can choose just those customers who owe you more than £10 who haven't paid you anything for three months and send the names and addresses to your mail merger for a chase-up letter. You can't select on an 'or' basis though, ie. you can't select every record which is that of a company *or* a big-spending individual.

You can print out your records selected to the screen, for browsing, or to the printer, or to a disc file for use by another program. You can choose form length, draft or high quality, but you can't embed bold or italic commands in the output.

Can you relate to it

AtLast claims to be a 'semi-relational' database, meaning you can look up an entry in one database (say a list of your books with details of publishers etc.) while working in another (your customer list say). This claim is a bit dubious, since all AtLast does is allow you to switch between different formats of the *same* database. One format may have a précis of the books, which you normally don't show to save screen space, and another may show it. Thus you can quickly 'look up' extra details by switching to the more detailed display format.

AtLast works quickly and has a good efficient feel to it. There's a system of prompts and menus so that whenever you have to choose a function the relevant command appears on a menu, and when you need to select one of the files, fields or forms you defined, those names appear in a menu at the bottom left and you only have to type in the first letter or two: AtLast will fill in the right name for you. This feature can be a real time and memory saver.

So what's the bad news? Very little to report. When printing to screen, you still have to define parameters for the printer, which is time-wasting and unnecessary. While AtLast is a brilliant program once you've got used to it, fast and powerful, the first few sessions could cause a few problems with the complex set-up process. The manual, while a marked improvement on the previous version, still isn't totally clear. There are rather a lot of annoying cross-references (3-22 refers you to 4-12, which you can't understand unless you've read 7-1, etc.) and the tutorial section which takes you through the setting up of a real database is very good and makes everything clear, but comes in section 6. If it came first it would make the manual and the program easier to work through.

The competition

AtLast's main rival must be Campbell Systems Masterfile 8000, selling for £49.95. It is difficult to make a choice between the two, but a couple of points do bear bringing out: Masterfile can do arithmetic in its data – you can say field 2 = field 1 times 1.15, to add VAT onto a price for instance. This makes Masterfile excellent for invoicing and other financial matters. Masterfile also has a better relational facility for cross-referencing two separate data files, and it must be said is easier to learn.

However, AtLast is a very good program. It is very strong in the area of handling club-type membership lists, having good address storage and sorting and the ability to eliminate duplicate entries. Its 'data compression' means that you don't waste disc space if you haven't used up all the space you could in a record – blank fields aren't stored. This makes it particularly good for unexpanded 8256 owners. Printed output can be made very impressive with any number of formats laid out just as you wish. Once its occasionally intricate workings have been fathomed it is fast and easy to use.

EXIT

What's new?

Users of Database Manager (AtLast) will find AtLast Plus almost identical. The main difference is invisible but significant: the way in which records are stored has been made more efficient – Rational Solutions claim that you can get up to three times as much data on the same disc as before – this will be a boon to 8256 owners. A side effect of this is that it is easier to change the structure of databases, add fields and so on. Also the manual, which got a bit of stick last time around, has been rewritten (in fact by the same author as wrote the manual for Protext) and expanded.

On the 'scan/update' option you can now add records without having to change to the 'add' option. This means it is now possible to check a record doesn't already exist before adding it. You can also now select records before browsing, and hence browse through just those customers who owe you money, for instance, instead of the whole lot.

Unless database files are becoming too big to store on disc, users of the existing version of AtLast probably won't find it worth paying the £19.95 upgrade fee, since the improved manual is obviously of less interest once you have learned the system anyway.

```
Name:     Mr Geoffrey Scott    Customer no: 11

Address:  "Freepost"                          Last order:      04/08/87
          4 Colossus Rd                       Last payment:    03/06/87

                                              Orders to date:  £129.00
          Bristol                             Money owing:     £56.89
          Avon

                                              Customer status COMPANY


Books ordered:
          Accountancy Can Be Fun                 Transpositions of History
          The Romance of Bookkeeping             101 Accountancy Howlers
          Accountancy Joke Book No. 6            Accounting For Taste


Name:     Dr S H Scott    Customer no: 1

Address:  'The Margins'                       Last order:      12/01/88
```

▲ a sample printout

Max headroom

Your limits in AtLast are:
records: 32000
files per database: 10
field arrays per record: 20
elements per field array: 99
characters per element: 79
characters per record: 2000 (2k)
different indexes: 5

PLUSES

- Good system of on-screen prompts
- Names and addresses handled well
- Efficient on storage space
- Auto record numbering
- 'Constants' enable repetitive data to be entered with one keystroke

MINUSES

- Method of setting up database can be confusing at first
- No arithmetic calculation in fields
- Manual could still be made better for beginner

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LEARN TO BE A HACKER

Ben Taylor explains a little about the innards of CP/M and tweaking programs to your own advantage.

Most months one of the articles in our TipOffs section goes something like "If you type POKE 65347,104 in BASIC, the PCW screen will jump up and down". Have you ever wondered how people find these things out, and if there are any more useful memory locations which do interesting things?

In particular, how can you find out little tricks about programs that run under CP/M – like SuperCalc, Protext, Masterfile and so on? You won't find any printed documentation about what parts of these programs do what (the manufacturers don't want you to know!). Luckily, there are ways of using the supplied PCW CP/M utilities to find out for yourself, although you'll need a methodical mind and plenty of patience – trademarks of a good hacker.

For any hacking, you'll need the files SID.COM, DUMP.COM, SAVE.COM, BASIC.COM and PUT.COM off your CP/M master discs(s). As an example, let's suppose you suspect that CP/M maintains a clock somewhere in the PCW, but you don't know where. The key is to look at the situation, make a small change, and see what effect your change has had.

Specifically, you need to look at the contents of the PCW's memory, make one change which you know will alter the memory addresses you are searching for, and compare the new memory with the old. Once you've got a list of all the bytes that have changed, you whittle them down by trial and error, seeing as you alter each one what effect it has. You must change as little as possible or, so many memory locations will change, you will have no idea what has had the effect.

Despite the complications of bank-switching hinted at in the box, you can think of the PCW as having 64k of memory, running from &H0000 to &HFFFF (the '&H' prefix means hexadecimal numbers). As the diagram shows, from &H0000 to &H00FF is a CP/M data storage area. The 61-odd k of memory that programs have available to them starts at &H0100. Quite where the top of program memory comes depends on what programs you have running, but in general it is around &HF600. The area above here is CP/M workspace.

Therefore, if you want to find a memory location which contains *system* information, like the time, you should look in memory locations &H0000 to &H00FF and &HF600 to &HFFFF. If you want to try to find data that a *program* uses (such as where BASIC keeps your program text in its workspace), with that program loaded you should be looking between &H0100 and &HF5FF.

By peek or by poke

There are two ways to inspect the contents of the PCW's memory. The easiest is by using BASIC's PEEK and POKE commands. Load BASIC and you can see that, for example, location &H50 (hex 50 is 80 in decimal) by the command `PRINT PEEK(80)`. Don't forget that BASIC works in decimal not hex, so you'll have to convert numbers if you are thinking in hex – alternatively, use `PRINT HEX$(PEEK(&H50),2)` if you think in hex.

To alter a memory location, such as putting 12 (decimal) into memory address 80, use `POKE 80,12` (or `POKE &50,&0C` in hex). Using PEEK and POKE you can alter any of the system workspace areas. However, by definition because you are running BASIC you can't use PEEK and POKE to look at the program area when other programs are running – so if you want to hack SuperCalc, it isn't much use to you.

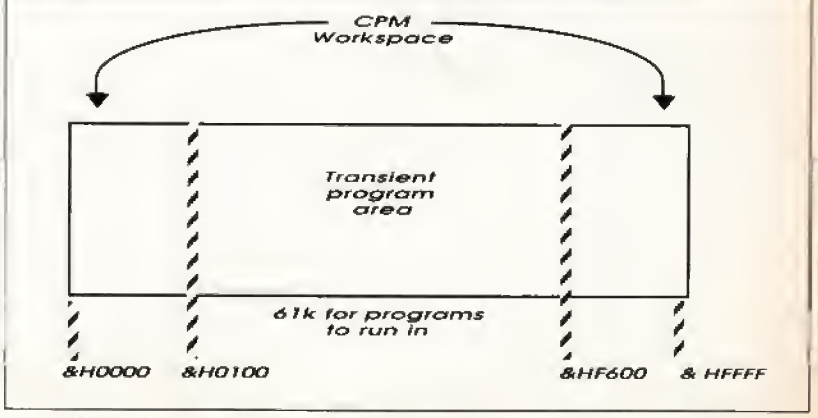
Here you have to distinguish between altering a program itself and altering some of the data it uses as it runs. If you want to hack into a program – say to alter some text messages that it produces – the best thing to do is to look at the program file as stored on the disc, which you do with the SID command. We've covered SID before in 8000 Plus, but to recap briefly, suppose you want to change the BASIC's 'Syntax error' message to 'Stupid error':

BASIC is held in the file BASIC.COM, so type `SID BASIC.COM`, and wait for the # prompt to appear. Keep typing `D`[RETURN] (for 'Dump'), and successive 192-byte chunks of the file BASIC.COM are listed on the screen in hex, with their addresses at the left and the ASCII representation at the right. When you see the message you want to alter, work out the address of the first byte – in the case of BASIC version 1.29, as on the 8256 and 8512, this is &H11B3. Type `S11B3`[RETURN] (for 'Substitute at location &H11B3'), then SID displays the current contents of address &H11B3. You can now type either a single hex number to replace the current one, or a double-quote followed by a string (ie. letters). Type `"Stupid`[RETURN], and SID puts the ASCII values for each character in consecutive bytes from the location you started at. Now type a . to leave substitute mode and finally, type `WBASIC2.COM` to 'Write' the modified version to a new file called BASIC2.COM, and press [STOP] to leave SID. If you run the new BASIC by typing BASIC2 [RETURN] at CP/M's A> prompt, you will find that if you make a mistake that would normally be greeted with 'Syntax error' it says 'Stupid error' instead.

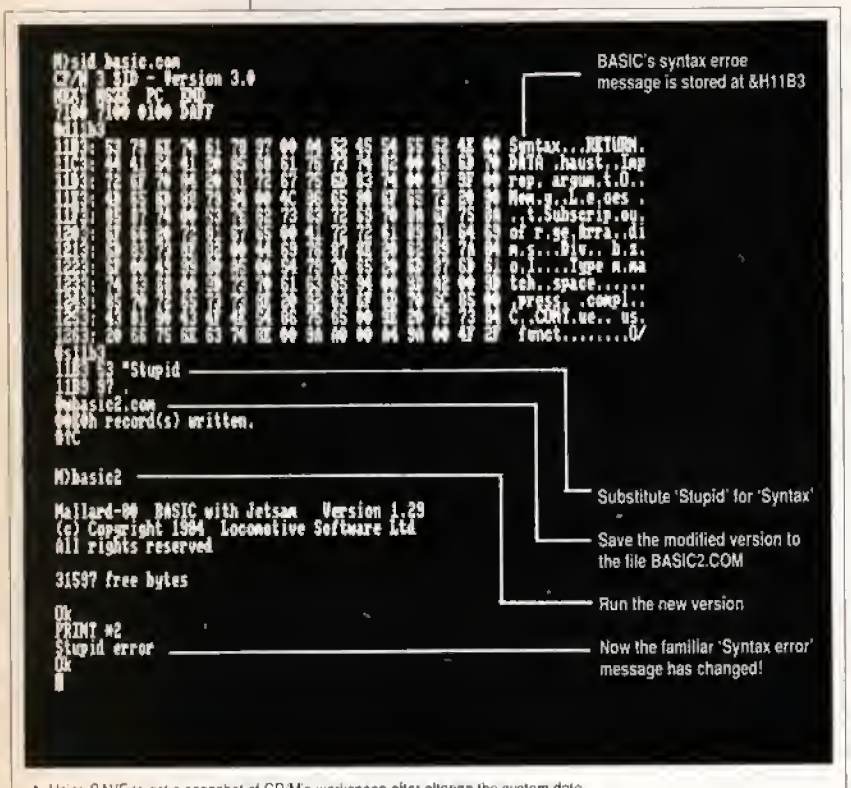
You can do this process of modifying text messages relatively safely for most programs, as long as you don't alter the length of the message at all. Your new text must be no longer than the original text, and if shorter you should pad it out with spaces.

Hex to decimal

You can use BASIC as a Hex to Decimal converter. To convert the decimal number 1234 to hex, use `PRINT HEX$(1234)`, to convert hex &H1234 to decimal use `PRINT VAL("&H1234")`.



▲ How CP/M splits the 64K of memory available for running programs in



▲ Using SAVE to get a snapshot of CP/M's workspace after altering the system date

Smile for the snapshot

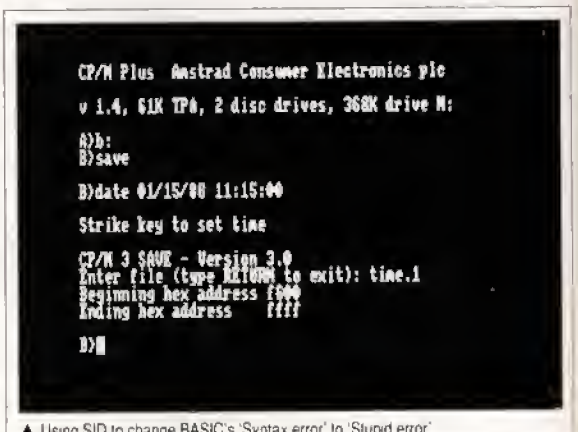
To find out what locations a program uses to store certain data items in, you must take a different approach. For this, you will need to take a snapshot of the PCW's working memory and inspect it.

The way to do this is to use CP/M's SAVE command. To get a copy of the working memory of any program, first of all type SAVE [RETURN] at the A> prompt. Nothing appears to happen but behind the scenes a special program has been loaded into the high end of memory. Now run your program normally and when you exit back to CP/M SAVE will swing into action. You are first asked for the name of a file to save the memory snapshot in, and then for the beginning and end addresses to be stored. You could choose 0000 to FFFF (don't type '&H' prefixes to SAVE) for the whole of memory, but this would create a 64k file. 0100 to F5FF would just save the program workspace, ignoring CP/M's workspace areas.

Now all you have to do is repeat this saving process for two different circumstances and compare the results to find the locations you are interested in. The DUMP utility will come in handy: `DUMP FRED.SAV` will list all the bytes in a file in hex so you can see what they are.

To get a printed copy of a file's dump, do an [ALT]+P first, to echo all screen output to the printer. If you want to save a dump in a file for future reference or inspection with a text editor, you can do this by using the PUT command before DUMPing : if you type, at the A> prompt, `PUT CONSOLE TO FILE LOG` ('LOG' is an arbitrary filename, choose your own) then all screen output will be stored in that file until you end the logging with the command `PUT CONSOLE TO CONSOLE`.

You may find it best to write a program in BASIC or whatever you favourite language is to compare the results of your SAVEd files byte-by-byte. The direct output from SAVE is a machine code or 'binary' file, so you can't use ordinary text INPUT commands to read them.



▲ Using SID to change BASIC's 'Syntax error' to 'Stupid error'

Finding the time

Many paragraphs ago the question of finding where CP/M stores its clock data was raised. There must be some bytes of memory which change as the seconds and days pass. The thing to do is to compare CP/M's workspace at two different times, looking to see which bytes have changed.

So, do a [SHIFT]+[EXTRA]+[EXIT] to reset the PCW (this is important so that you know CP/M's workspace is in a virgin state). Now run SAVE, and set the date with the DATE command. DATE expects the date and time in the American form mm/dd/yy hh:mm:ss, so pick an arbitrary set like `DATE 01/15/88 11:15:00`. As DATE exits the SAVE routine starts up, so pick a filename such as TIME.1 and when asked for the area of memory to save choose CP/M's upper workspace, F600 to FFFF (let's assume for brevity that you've already worked out the clock is not in the lower workspace of 0000 to 00FF).

Now reset the PCW again and repeat the process. This time, choose a date and time that are entirely different, say 02/14/99 23:34:56. Rather than using DUMP to compare around 3,000 values, a comparison program written in BASIC reveals that there are 40 memory locations that have changed. You now use BASIC to POKE to these in turn. On exiting use DATE again (just type `DATE` [RETURN]) to see if CP/M's clock has changed. It turns out that locations &HFBF6, 7 and 8 contain the clock.

This method can be used to track down many system or program locations. Remember that as long as you keep a backup of any files you intend to hack, the worst that can go wrong is for the PCW to crash now and again.

EXIT

Inside info

The PCW is built around a microprocessor called a 'Z80', which can access 64k of memory. In hexadecimal notation, the memory addresses run from &H0000 to &HFFFF (the '&H' prefix indicates hex as opposed to decimal numbering). To create more workspace the designers have created several memory 'banks' of 64k each, and the Z80 can switch between banks at will. Thus the machine can access more than 64k in total, but not all at the same time.

The most important area of memory to know about is the 'Transient Program Area' or 'TPA'. This is 61k of memory, all in the same bank, which is used to store programs as they run. Suppose you are going to run BASIC: when you type BASIC [RETURN] at CP/M's A> prompt, it loads the disc file BASIC.COM into the TPA, which takes up 28k. After a few k for BASIC's workspace, this leaves 31k free for your programs. Most applications you run aren't specifically written for PCWs and don't know about the bank-switching trick, so they can't access any memory outside the TPA. This explains why, no matter how much memory you have, BASIC can only store programs up to 31k.

The 3k in the bank not used by the TPA goes in system organisation, 80k or so from other banks is taken up with screen memory and the CP/M program itself. The rest of the PCW's 256 or 512k is available to the user as the M drive to store files on.

The TPA, where all programs run, is in a different bank to the screen memory. Changing banks is a low-level CP/M operation that requires knowledge of machine code, which is annoying because this means there is no simple way, like with a POKE command, to write directly to the screen memory from BASIC or general programs.

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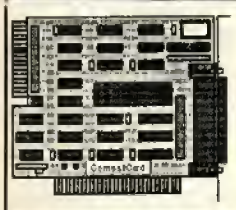

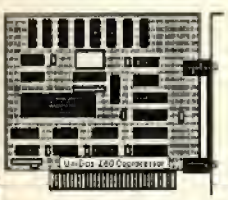

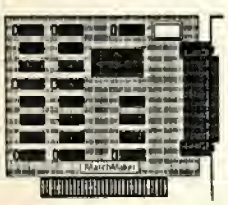

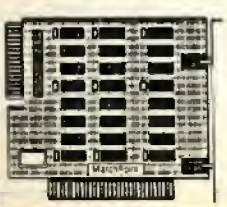

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Unused data space is not saved to disc and therefore use of disc space is optimised. Typically three times as many names and addresses can be kept on a floppy as on a fixed format system. Will operate happily on a single floppy machine or a hard disc if you have one

*** Semi – relational**
Records can be related between files so that you can switch from one record to a related record in a few key-strokes.

*** Report and screen layouts**
All screen layouts and report forms are user-definable using a built-in mini-word-processor and you can have as many as you like for each file. Examples are data entry screens, browsing screens, columnar listings, labels, letters. Any data item (field element) can be positioned anywhere and mixed with explanatory text as desired. Simple "default" forms are created automatically for each file.

*** Reports**
Data can be exported via ASCII files in any layout desired (e.g. for mail-merge via virtually any word-processor that has a mail-merge ability).
Listings can incorporate "head" and "tail" sections, with field totals, if desired.
Listing parameters can be re-used for successive listings, changing only those that need to be changed.

*** Data Entry**
Data can be entered and individual fields edited using full on-screen control, passing up or down through fields at will. Data entry forms will scroll up or down on screen as required.
All data is validated on entry according to its type.
An integrated environment means that you can search to see if a record is already there, using a selection filter if you wish, before adding, editing or deleting it. Index files are automatically updated without your even noticing.

*** Indexing/Sorting**
Up to 5 index files for any data file, each ordered on up to three levels (data items) with entries up to 30 characters. Uses state-of-the-art "B-trees" buffered for almost instantaneous access. No tedious sorting required.
Mixed case fields give true alphabetic ordering – no need to use upper case only.
Any index can be used for either listing or browsing order or for searching for individual records.

*** Selecting**
Selection conditions can be imposed on any field or combination of fields when listing using Equal To, Not Equal To, Before, Equal or Before, After, Equal or After, Contains (substring) or Does not contain, Selection conditions can now be used whin browsing or searching for individual records

*** Field Types**
A versatile range of 9 field types is available. Types include date (0-9999AD), time (HH:MM:SS), automatic serial numbers and pre-defined lists.

*** Data Security**
Any file can be protected from editing, adding to or deleting or any combination of these.

*** Data Re-organisation**
Data definitions can be edited without having to re-type data. In most cases, this is handled automatically.

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'C' IS FOR CONSULTANT

To his partner's dismay, Barry Sims proves the PCW is a match for any 'business' computer, and indulges in some programming.

My business partner John was not immediately impressed: "We've bought a *what*?" and scuttled off to re-adjust the cash flow forecast.

It wasn't really the appearance of a computer – or to be more accurate *another* computer – that worried him, but more the fact that it was a "home computer", an Amstrad PCW8512. Yes, I'm afraid you can get a bit stuffy when you're used to working with £2,000 IBM PC-AT clones and suchlike!

Amstrad ownership came about because I needed a workable and affordable word processor to use at home for completing an especially lengthy business report. Although the material for this was being collected and sifted at the office, the target date for completion necessitated a lot of typing and editing outside of sensible office hours. We didn't think it a particularly good idea to subject the office PC and its hard disc to 20 miles a day of road travel between home and office, so I decided to investigate the possibilities of using a PCW. This of course necessitated a visit to the local computer shop.

Now as far as I'm concerned, visits to most computer shops rank second only to visits to the dentist in terms of undesirability. Just why computer emporia are populated by fresh-faced fervent adolescents enthusiastically spouting jargon (in the manner of train spotters) is something that has always been a mystery to me. Why not have a few in-store cynics? No wonder first-time buyers get the collywobbles.

Anyway, I managed to have a fairly long play about with a few different machines (this is known in the trade as a "hands-on session" (which always sounds mildly rude), and was duly spouted with jargon. Unfortunately, I understand more of the jargon than the fresh-faces, which rather spoils their game. As a tip, always try to engage them in conversation about 'finite state machines', 'predicate calculus', 'manufacturing automation', or something similar. The results are quite amazing.

Fortunately, High Street computer shop staff tend not to be particularly well trained in the art of selling. This gives one the opportunity to escape and dash round to the nearest discount chain store – the sort which has a perpetual 'sale' – and purchase the system of your choice, usually for a few pounds less. Which is exactly what I did after deciding that a PCW would be suitable. I also got something rather dubiously referred to as a "light pen art package" (I've never actually known one to work very effectively) thrown in as "bargain of the week". And there I was, or more correctly the business, an Amstrad PCW owner.

The joy of expense accounts

In case you find it odd that a business should spend close to £600 on a machine to complete one project, I'd better explain. As consultants in 'management with computer-based technology' (I mention this purely to impress the uninitiated), our business is such that the production of one detailed specialist report represents quite a substantial amount of income. This particular one in fact took over 800 man-hours to research and produce, the rewards being suitably in proportion.

The price of the Amstrad was such that the capital expenditure (plus running costs) amortized over a few jobs would cause relatively little financial upheaval: such things are known as 'creative accounting'.

As my life is more or less geared to new technology – apart form the electric toaster, which always incinerates my breakfast – the PCW didn't make too much impact aside from the disgustingly expensive discs which eat large holes in wallets. And you don't always get a nice plastic case for them either.

I must admit that I rather like LocoScript. It has its foibles – which is jargon for faults – but no software package ever pleases all the users all the time. The Loco manual is very well written by comparison to most 'professional' package manuals, but why should you have to pay another few pounds for details of the bundled BASIC? Presumably not too many people do, having bought a PCW first and foremost for word-processing.

LocoScript seems to cope quite happily with those who type with twenty-two fingers without ever glancing at the keyboard, but is perfectly operable by one-fingered typists (to plagiarise an old Caxton Software ad). I actually type with four fingers and a thumb, but can never remember which particular ones.

This probably explains why I never get on very well with things like WordStar. Every time I use it I end up re-defining the keyboard, but it's never quite right. The fancier word processors and text editors are also full of esoteric functions which clutter up the keyboard and rarely get used. Many of these are far more suited to dedicated WP equipment which has dozens of extra buttons on the keyboard. Life's a lot easier with LocoScript.

"Yes, but what can it *do*?"

But what do you do with an Amstrad when you've finished processing all those words? "Sell it," said John. "I bet the only other software for it is Space Zappers or Home Recipes..." I was sure this wasn't

Choosing the right C

The C compiler and text editor package I chose was the MIX one, distributed in the UK by Analytical Engines of Eastleigh. I picked this particular C compiler mainly because I had seen it run on PC (though hadn't actually used it), and had heard good reports about it. It certainly does most of the things that I need, and comes with a very well written manual and reasonably comprehensive library of functions (which are pretty vital). The manual also includes a useful tutorial section, which came in very handy because I couldn't remember as much about C as I thought I could.

Unfortunately when I took delivery of the package I broke one of the golden rules: "always check that all the files are on the disc". The normal practice in the office is to make sure that all the files are intact, that there are no unreadable disc sectors, before making up a back-up by individually copying the required files (which may not be all of those that are on the original).

I didn't do this. Instead I just copied the ones immediately wanted. Only much later did I discover that the overlay file associated with the alternative C compiler (you effectively get two versions on the MIX package) had a disc nasty of the sort which causes CP/M to announce the much feared NON-RECOVERABLE error message. Fortunately this didn't turn out to be a major problem, as Analytical Engines quickly supplied me with a working replacement.

```
/* Execute word count */
int countup()
{
 int c,wordcount,isword;
  wordcount=0;
  isword=FALSE;
  while ((c=getc(input_file))!=EOF)
        { if((isalpha(c))&&(isword)) {
                                       isword=TRUE;
                                       wordcount++;
                                     }

          else if(!isalpha(c)) isword=FALSE;
        }
  return wordcount;
}
```

▲ Example of a C program to count the words in a document

true. The PCW does use CP/M 3, after all. It's a shame those nice people from DR don't give you something more useful and interesting than Logo. Some halfway decent business graphics wouldn't go amiss, especially as you get the GSX system software.

Where do you find out what packages are available for the Amstrad? Oh, no, not the computer shop again,surely? They're probably still trying to fathom the meaning of LIFFE. (In fact, it's the London International Financial Futures Exchange, but I slipped it into the conversation gratuitously anyway!) No good looking in the "trade" magazines which flood our post each month! Presumably not many PCW users read *VME Bus User's Gazette, Software Boffin's Weekly*, or whatever they're called. (I never have time to read them, you see.)

Our local newsagent – who bears an uncanny similarity to the Ronnie Barker character Arkwright – knew the answer immediately. "Amstrad, eh. Try this". This was *8000 Plus*. "Use an Amstrad myself", said Arkwright, "running Sage Accounts. Can't get the hang of this CP/M though. Know anything about it?" I gave him our hourly consultancy rate. He declined, and gave me a foreign coin amongst the change.

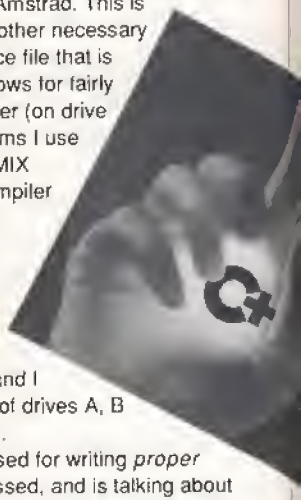
The ads in 8000 Plus bore out my suspicions. Bundles of interesting packages to run on the PCW: games of course, lots of well known applications software (dBaseII , Cardbox, Sagesoft Accounts, etc), communications and languages.

Now although we don't write software for a living, we quite often knock up small to middling sized programs for our own use on the PC clones, to help on specific projects, whilst the more major applications are catered for by commercial packages such as dBase and Visicalc. The language we use is generally either BASIC or Pascal, depending on the nature of the program. Sometimes, though, you need to be able to set up some rather outrageous data structures and fiddle about with things in much finer detail. A better language for these sorts of tasks is the C language (so called because it came after the B programming language. Clever, that!)

I'll avoid waxing too lyrical about C as this would require lots of jargon which might spread alarm and despondency amongst those still battling to master LocoScript. In essence, though, it's probably best described as a high-level machine code, which buffers the user from needless jiggery-pokery with the details of the microprocessor. C is used for writing operating systems (CP/M is an operating system) as well as applications like databases, for example).

At home on the C

Unless I'm editing a fairly large program – and C source code can be made very compact – I tend to use the BASIC RPED editor supplied with the Amstrad. This is kept on Drive M along with the other necessary files, as is a copy of the C source file that is being worked on. Doing this allows for fairly rapid switching between compiler (on drive A) and editor. For larger programs I use the MIX text editor, part of the MIX package, which can call the compiler directly.



One day I shall actually get round to arranging the drive search paths and compiler and linker files with CP/M's handy SETDEF command, so that everything resides on Drive B and I don't have to remember which of drives A, B or M I stored a particular file on.

So now the Amstrad gets used for writing *proper* programs. John is much impressed, and is talking about getting another one. This has probably been prompted by the fact that the first PCW seems to have taken up residence at home.

Having the PCW at home allows me to do interesting intellectual things such as real-time monitoring of the wounds inflicted upon my bank balance by the wife, 2 children, 2 dogs, 2 cars and voracious tax man, along with instant generation of grovelling letters to the bank-manager.

All work and no play?

"And what about that 'lightpen art' package that came as a freebie with the machine?" I hear you ask. Well, my children – ages 3½ and 5 – think it's great fun. So do I. I used it to draw lots of keyboard pictures so that I can keep track of what dreadful WordStar functions I've mapped to what keys on which machine at work. The only trouble is that I still can't remember whether I need the "Control KV" or the "Control KY" key. One of them makes the block you're working on disappear, which is why I wrote this using LocoScript. EXIT

Cases in Point wanted!

8000 Plus has been publishing 'Case in Point' for over a year now, and we're constantly amazed by the range of skills our readers have. If you've got an interesting application to relate – maybe you've found some particular software invaluable, or you use your PCW for an interesting organisation – we'd very much like to hear from you.

For instance, there must be hundreds of club secretaries reading this who have struggled to computerise membership lists. Why not write about the pros and cons of various databases you have tried? Do you work in an office where PCWs are used? Charity work? Journalism? The list is endless.

Articles should be around 2,000 words, preferably with an illustration or photo of some kind. Write to *Case in Point, 8000 Plus, 4 Queen Street, Bath BA1 1EJ.* If you don't feel able to write it yourself, send us an outline and if it sounds promising we'll get in touch. Our usual generous payment rates apply!

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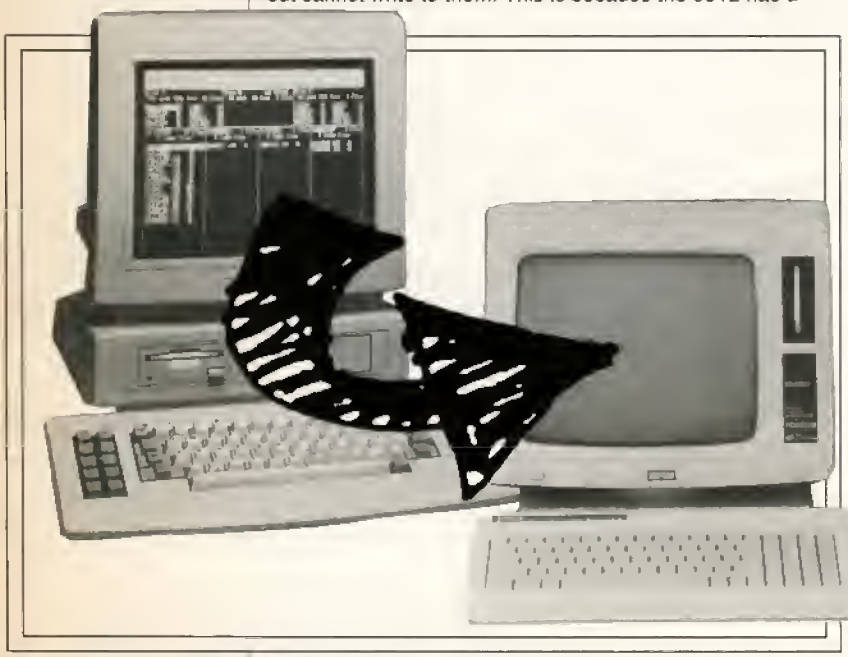
QUICKIES!

PCW9512 RESCUE KIT

£9.95 ● Three Inch Software (01-546 2754) ● 9512 only

If you've got a PCW9512, you may or may not have a problem. The situation is that the 9512 can read discs prepared for the 8256/8512 (called 'Single Density ' discs), but cannot write to them. This is because the 9512 has a 'Double Density' disc drive, the same as the one the 8512 has for its lower B-drive.



The majority of 9512 owners won't find this a problem, but if you have any friends or colleagues who only have 8256es then the problem is that although you can read discs they send you, they can't read discs you send them. Until now it was widely thought to be impossible to get around this problem, but with a very clever piece of programming Three Inch Software appear to have solved it.

The PCW9512 rescue kit consists of three utilities, all controlled from a main menu, with a documentation file on disc.

The first option is to format a disc – if you want to write files to a single density disc you obviously need to format it in the way the 8256 expects. Copying a file from a 9512 disc to an 8256 disc is straightforward, you just put in the relevant discs and type the filenames as prompted. One problem is that the program doesn't allow you to erase files from an 8256 disc, so if there isn't enough room you will either have to find another disc or erase the whole lot by reformatting it.

Three Inch Software point out that because the 9512 disc drive is different to the 8256 drive the copying process is not 100% reliable. We found that 8256es could read the Rescue Kit discs fine if a newly formatted disc was used, but couldn't if you tried to add files to a disc previously formatted on a real 8256 (rather than with Rescue Kit).

A final option on Rescue Kit is to copy 'Self booting' 8256 discs to 9512 discs. The 9512's standard command 8000COPY will do this for CP/M discs, but some games programs don't use CP/M and therefore can't be copied. In theory then, Rescue Kit claims to be able to copy games discs to the 9512, but in practice it only seems about 25% effective on this. It didn't work with 'Scrabble', for instance, but did with 'The Living Daylights'.

Even so, the ability to write files to 8256 discs will be extremely handy to many 9512 owners, and £9.95 is a very reasonable price.

RANGE OF FEATURES ■■■■■ PERFORMANCE ■■■■■
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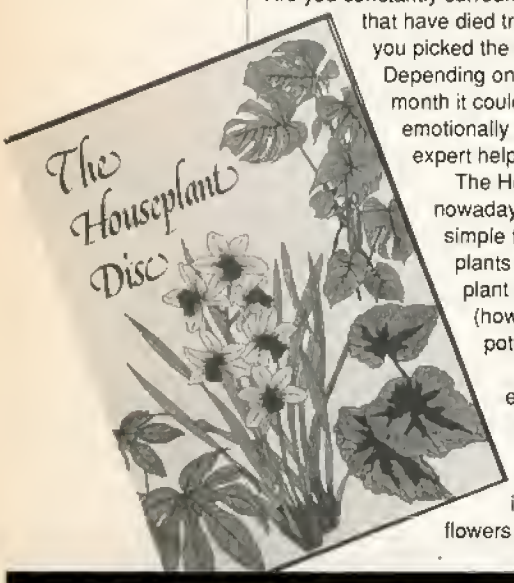
THE HOUSEPLANT DISC

£19.90 ● HeptaCon Ltd (0279 33071) ● all PCWs

Are you constantly surrounded by the remains of pot-plants that have died tragically young? Was it because you picked the wrong plant in the first place? Depending on how many plants you kill in a month it could become economic (and emotionally soothing) to invest £20 on some expert help from HeptaCon.



The Houseplant Disc is what is nowadays called an 'expert system'. In simple terms it's a database of over 200 plants with a brief description of each plant and details of any special needs (how often it needs watering or re-potting etc).

You can specify the environment your plants will be living in, eg. direct light or shade, what size you want and what the room temperature is. It tells you if the plant is attractive for its flowers or its scent and the $64,000 question 'Is it easy to keep?'

You can use it simply as a database, searching for a specific plant and getting the suitable details. But normally you will want it to choose the most suitable plants for you.

The screen lists 16 categories which you have to give a 'weighting' to. This means giving it a score of between plus and minus 10. If it's really important that a plant be small you could give 10 for the category 'Mature specimen: up to 2ft' and maybe –5 for 'Mature specimen: over 4ft.' if that's a problem for your room. If you're not bothered one way or another choose 0.

The program runs your requirements against the database and picks the top 20 closest to your requirements which it prints out with their Latin names.

Despite some unlikely names (what's a 'Touch-Me-Not'?), most suggested plants were well-known although a bit of research at the nearest nursery showed that many on our list were not available. Reasonably enough many plants are seasonal, although there were no details in the program of when they would be available.

Heptacon have realised that this sort of program may be be used by non-PCW-experts and have worked hard at making it fool-proof. Every time you print anything you can change printer settings by menu. If things go wrong there are no brutal CP/M error messages but a polite page-long message telling you that perhaps something has gone wrong.

Really, this is only for the house-plant loving PCW enthusiast. Most people would probably be happier spending the £20 on a book with glossy pictures.

RANGE OF FEATURES ■■■■■ PERFORMANCE ■■■■■
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EXIT

PCW 8256 8512 PCW

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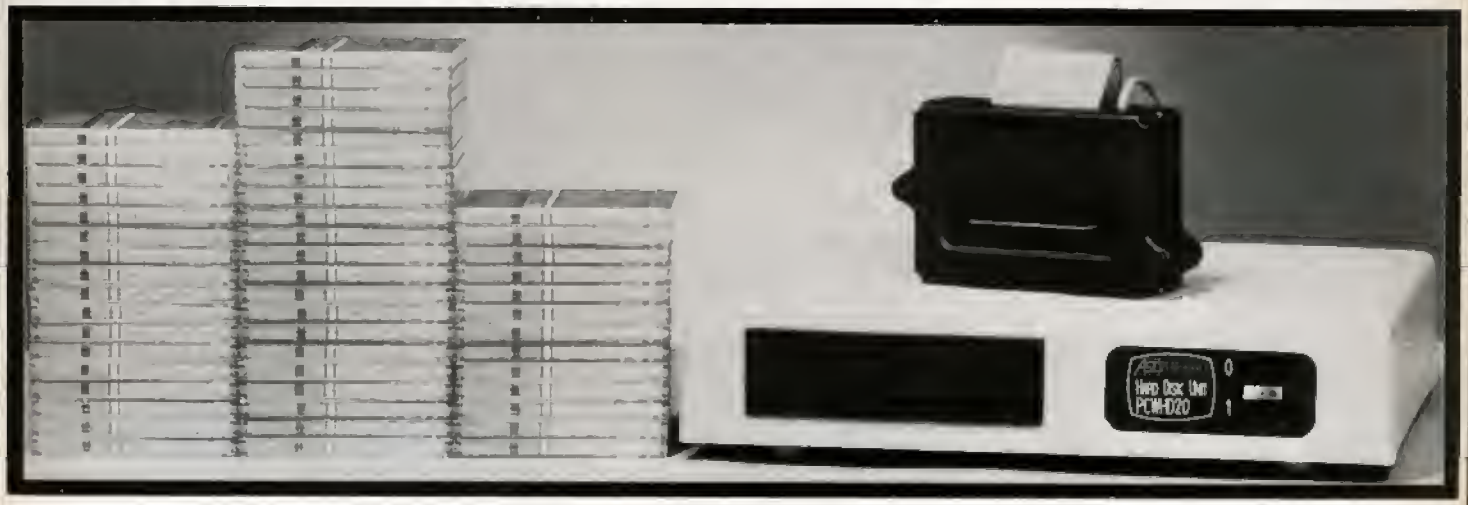

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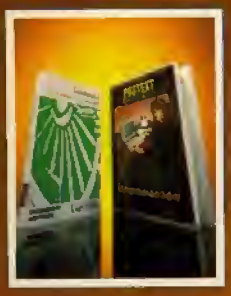


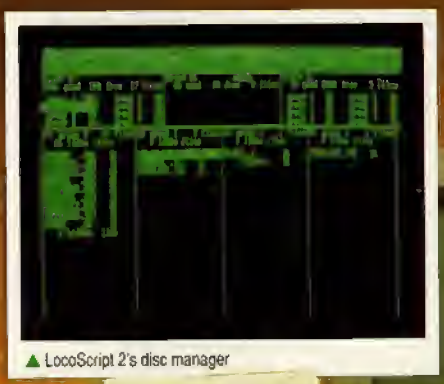
LOCOSCRIPT O

Which really *is* the best word processor? Rob Ainsley referees the battle of the words.

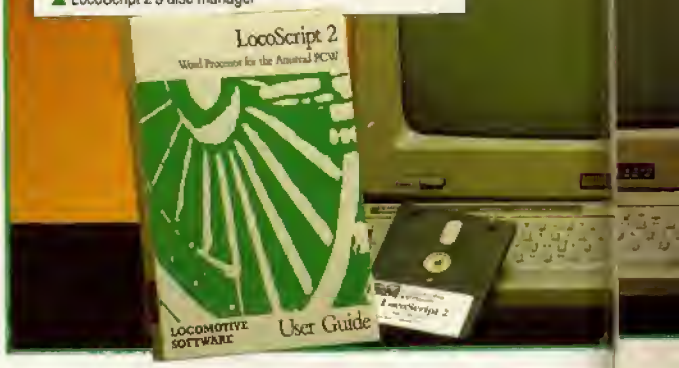
Despite the high profile of spreadsheets, databases and desktop publishing packages, for the vast majority of the time PCWs are used for straight word processing. If you're a LocoScript user and a regular reader of the various computer magazines, you might wonder what all the fuss is about other word processing software. The answer is that you could be using your time inefficiently if you have the wrong word processor.

As well as LocoScript 2, there's Protext, WordStar, NewWord, Tasword and now Mini Office Professional. The truth is that no matter what the adverts say, there's no such thing as the ideal word processor, and which is the best one for *you* depends on what kind of work you want to do with it.

We've set out to discover the pros and cons of the two major PCW word processors, LocoScript 2 and Protext.



▲ LocoScript 2's disc manager



Two faces of word processing

Protext is very different to LocoScript; the equivalent of Loco's disc management screen is called 'command mode' and works a bit like CP/M, with an a> prompt. There you can get directories, delete and copy files and so on.

Unlike LocoScript, which starts up from scratch, Protext works directly from CP/M – ie. you put in your CP/M disc and at the A> prompt type PROTEXT to get it going. This has the advantage that you don't have to restart the PCW to use your database or spreadsheet – and when you return to Protext, you find that the document you were editing is still there in the memory with the cursor just where you left it.

LocoScript solves the menus vs. commands problem nicely by its 'set' and 'clear' keys – the [+] and [-] keys by the space bar. As well as having the f-keys and menus system which makes life easy for beginners, once you're more skilled you can press the [+] and [-] keys and then select the required item by a single letter, pressing B for Bold for example. Protext works mainly by key commands, so that [ALT]+X B sets bold, for instance, but those keys over on the right of the keyboard also work in Protext, so that to paste a block of text either [ALT]+M or pressing the [PASTE] key has the same effect. You can give your commands equally efficiently with both once you're over the learning curve. Here's how the various packages compare for each task...

Exchanging letters

Probably the first things you typed on your PCW were letters to all your friends telling them about your new toy, resplendent with italics and bolds and different pitch sizes. Small businesses put their machines to work producing business documents – quotations, press releases, price lists, catalogues, reports etc. You can produce very smart newsletters too, and a high proportion of PCW owners put together parish magazines or community news sheets.

In all these, layout is crucial. The impact comes from the overall appearance as much as the content. Locomotive were very conscious of this when they designed LocoScript and one of its great strengths is the control over the final printed layout. You can combine any of the 'special effects' – a centred headline of double-width proportionally spaced bold italic overprinted on itself slightly displaced, for example, for letterheads – and LocoScript always gets the positioning and margins just right.

LocoScript also allows you to define a stock of numbered layouts for any document. You could have one for body text,

▲ LocoScript 2's editing screen

Spell bound

When you run a document through a spell checker it matches each word in that document against its dictionary. If the word doesn't appear in the dictionary, it will pick out the word and let you change it, add it to the dictionary, ignore it, or else it can suggest a replacement by giving you the nearest word it can find in its dictionary. They are excellent for weeding out mistyped words like 'becasue' and 'unfortunatley'.

You can call LocoSpell while editing a document, and so see all your words in context; you can even check a single word, and get displayed on the screen the portion of the dictionary in the region of the doubtful word. The system works with a large base dictionary LOCOSPEL.DCT (held in the memory drive for speed) and any number of your personal additional dictionaries.

Whereas LocoSpell works through a document word by word on screen, scrolling through it as you watch and edit, you run Protext's spell checker after finishing your edit. Prospell has various utilities in addition to the usual ones – you can search the dictionary for anagrams of the word 'stare' or look for all six-letter words ending with '-ed' and so on, which crossword fans might find useful.

OR PROTEXT?

▲ Protext in command mode

one for tables of figures, one for product lists etc., and to switch over to each at any time just by pressing a couple ot keys and the appropriate number. So good are LocoScript 2's layout facilities and so wide is the range ot characters and symbols available that you can even do simple graphics – bar-charts, for example, or boxed text, or neatly set out pages of the correct size to put in your Filofax.

Side effects

If you try to put special ettects like these into a Protext document you quickly run into problems. Try to centre a double-width headline and you find it runs off to the right. It you justify your text in Protext, you find on the printout that the alignment of the right hand margin has been achieved by padding out the line with extra whole spaces between some words – proper justitication is achieved by widening every space on the line evenly. You can get true justitication, but if you try it in conjunction with proportionally spaced print you'll have a long wait for the printout – the printer prints each word individually, stops, moves back, and overprints.

Layouts in Protext are controlled by 'ruler lines' – by putting a line like >----!--------R in the text you can set the new left (>) and right (R) margins and position the tabs (!). This is quicker than LocoScript's sequence of menus but in the long run is less convenient, because you can't use 'stock' layouts.

Protext doesn't reformat altered paragraphs automatically as LocoScript does. If you add some text to the middle of a paragraph causing some lines to stick out beyond the margins, or delete some words leaving a line short of the margins, they stay that way until you manually torce formatting by typing [ALT]-F or [RELAY]. If you're not careful you can end up printing out misaligned text.

Protext's speed advantage is barely noticeable on one or two page documents. You *can* achieve impressive layouts with it, but it's generally easier, quicker and more effective in LocoScript. If you use your PCW for short letters, business documents, circulars, newsletters and so on, LocoScript 2 remains one of the best programs around.

File handling

LocoScript organises your discs very thoroughly, giving you eight groups per disc to work with and allowing you to keep a different template in each group. When you create a document, the TEMPLATE.STD is copied into it, so you can set up letterheads and so on very quickly.

Protext doesn't have the same concept of groups and templates as LocoScript – all files are stored in group 0 unless you select another one, but you can't get a display of what's in all the groups at once, as Loco's disc manager screen does. There is no 'create document' command as such, but you just load your template file in, make any edits you want and save it under a new name. In other words, you have to do manually in Protext what LocoScript does for you automatically.

ManuScript 2

The green screen is a remarkable spur to creativity and pretty soon your PCW will be at work on much longer

▲ The same document as it would be in Protext

9512 note

Bear in mind as you read this article that all comments about LocoScript's range of graphics/ characters/ accents only apply to 8000 series owners. On a 9512 you can only get the standard characters, even if you do own an extra dot matrix printer

There is now a special version of Protext out for the 9512, which works in exactly the same way but copes with the new printer and disc drive properly

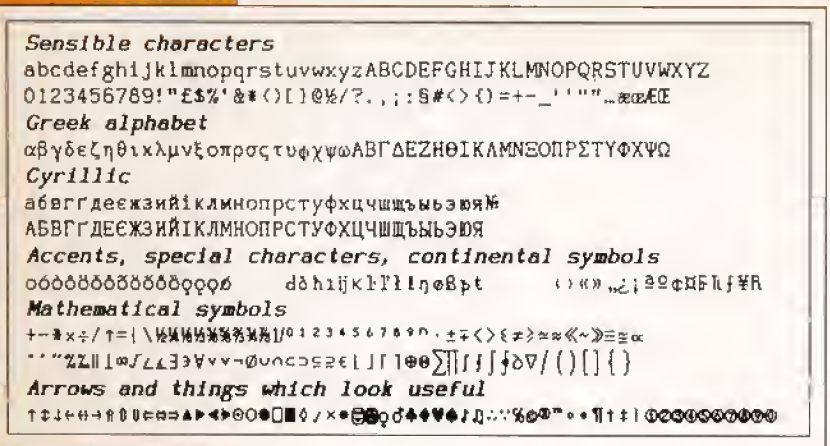
Profit mergings

Computers are meant to save time and eliminate tedium, and mail merging facilities are your PCW's *tour de force*. Mail mergers take one file in which you have a list of names and addresses (perhaps from your database), another with a skeleton letter in which you have defined slots for the recipients' name and address, and print out a letter for each one, inserting the items appropriately.

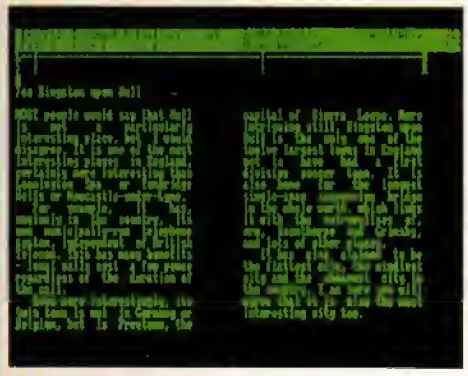
Both LocoMail and Protext cope well with standard mail shots from a name and address list, reformatting paragraphs to fit the inserted information. Both have the facility to cope with arithmetic (they can tot up the prices of the products customers have bought and insert that, for example) and can print conditionally – ie. 'only print this paragraph /letter if the customer owes us money'.

In Protext you have to set up your name and address lists with rather more care than in LocoMail – you can just tell the latter that the address is all the text, complete with carriage returns, between here and the semi-colon, but Protext has to have each line of the address given separately, which can make things tricky if some have two lines and others ten. Protext knows not to print blank lines, so if you leave ten lines for the address and use a two-line one, it won't print the eight blanks.

One nice feature in Protext is the ability to strip off the first letter of a string – handy to get someone's initials automatically from their name."



▲ LocoScript 2's character set



▲ Protext showing off two columns

documents: bulk text processing such as business reports, novels, articles, plays, short stories, theses and sermons.

This is where LocoScript's only real fault starts to show, and where you begin to pay the price for that constant formatting. The cutting and pasting functions take their time, and only a geologist would describe the find and replace functions as fast. Sometimes the 'Find page' function works surprisingly fast (sometimes faster than Protext!); sometimes it doesn't, and you'll have plenty of time to go and make a cup of tea.

The answer is to split your documents into shorter chunks where its sloth is less apparent, but as a typical chapter of a book might be 40k, you have to start hacking your chapters up unless you're especially fond of tea.

Using Protext for the first time is a startling experience. You can zip up and down 100k documents in seconds, move large blocks of text around instantaneously (no watching the reverse-video strips build up and unwind through your cut block) and scroll through your text as fast as you like.

Protext's equivalents of find and exchange work very fast, and are much more flexible than LocoScript's. If you want to take out all italic set and cancel commands in a LocoScript document, you have to do it manually; in Protext you can include the italic on and off codes in the string to be searched for and replace them with nothing in a couple of seconds. You can also use the find command to find out how many times a word or sequence of words appears in a document – Protext could count up all 132 occurrences of the phrase 'the fact of the matter is' in a transcript of 'Question Time' in an instant. You can thus watch your style and check certain phrases aren't appearing too often.

One advantage LocoScript does have is that it can match the case of the text being changed with the old text. If you are globally exchanging 'next' for 'last', the initial letter will be capitalised if the word was at the start of a sentence.

Every second counts

Another godsend in Protext is the word counter. Even if you have LocoSpell it still takes a few minutes to get the number of words in a LocoScript document; if you don't, you have to leave LocoScript, start up CP/M, and run a BASIC listing to count your file, which takes a good minute or two. With Protext you just give the command 'count' and your total appears almost instantly – it counts something like 1000 words a second!

Headers and footers – text which is to be printed at the top of some or all pages, such as your letterhead at the top of page 1, or '/cont'd...' at the bottom of each page, can be done in either program, though you can only have one-line headers and footers in Protext. This means you can't have your header or footer ruled off from the main body text by a line ruled across the page, a smart effect which is standard practice in LocoScript. Both programs can print a series of documents (say chapters of a book) so that the page numbering is continuous. Both programs let you have different headers and footers for alternate pages (ie. right and left hand pages).

As you explore Protext you find many nice touches. For example, if you delete a line you can undelete it with [ALT]-U. Also, you can edit two files simultaneously, swopping between them instantaneously by pressing [ALT]-Y. Blocks of text can be pasted from one to the other by the command [ALT]-O.

This has a number of uses. Suppose you are writing an article on Karl Marx; first you could make up a file MARX.DAT containing all the information you can find about him. When you write your article, you can keep swopping over to MARX.DAT and paste across any text or information you want to insert in your article. You can set up a number of data files like this and use Protext as a free text database.

And there's more

Both programs have plenty of extras which could quite easily make all the difference. LocoScript 2, as everyone must know by now, can cope with the Cyrillic script in all its Eastern European variants, Greek, Welsh, and all the accents in every language this side of the Bosphorus. Its range of mathematical and other symbols is good too, including some double height symbols for integration etc. For any work involving foreign languages or mathematical work, which must include a lot of people writing theses out there, it's simply the best. LocoScript 2.12 even lets you design any number of character sets, each of which can include up to 16 characters of your own design – you can put these to good use in graphics to illustrate figures; they look very impressive in business reports.

The character range in Protext is good but doesn't really compare. However, in Protext it is possible to redefine the entire character set on screen and printer, so you can make your own Korean or Hebrew word processor – *but* there's no simple screen editor for the characters, you have to work it out as hexadecimal codes on paper, and you can only get draft quality printout of your new characters. There are other goodies too. There's a calculate facility built in, so in the middle of a document you can work out and insert the VAT on a price or what the total cost of those thirty items is without rooting out your calculator.

You can also store a series of commands as an 'exec' file and then run them all with one command; so, for example, you can count all the words in chapters 1 to 57 of your book

Other word processors

In the first paragraphs of this article, a few other word processing names like NewWord and Taxword were bandied around. However, the fact of the matter is that LocoScript 2 and Protext are the only two word processors worth considering for serious use on the PCW.

The only real reason for buying anything other than LocoScript 2 or Protext is if you are working for a company who expect you to produce 'WordStar compatible' files. WordStar was one of the very first microcomputer word processors, and it became the standard – it still is on IBM PCs. Because it is so well known, many third-party programs are geared up to read WordStar document files.

Interestingly, a new version ('Release 4') of WordStar is just out specially for the PCW9512. However, despite costing £194.35 inc VAT, it can't print £ signs.

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The horse's mouth

We asked the two main protagonists to give us their views. Here's what Howard Fisher of Locomotive software said:

"What is really important about a word processor? You want to get well-arranged text printed properly onto paper, quickly and simply.

"LocoScript 2 ensures your text is well laid out by controlling this aspect particularly carefully. There are no surprises with LocoScript 2. We expect you to want to use proportionally spaced text, so we get it right! We expect you to care about how your text splits into pages, so we give you control and show you the results - always, not just on paper.

"Or, as they say in Dorking, 'what you see is what you get'".

And Arnor's Mark Tilley reckons:

"'Protext is by far the best, fastest, easiest and most comprehensive of them all' these words from a customer who had previously used LocoScript and NewWord are typical of the unsolicited comments we receive from Protext users.

"Potext is more than word processor - it's a movement! With each new version of Protext, more people are converted, and once converted, don't change back. We are creating a new standard for an ever-increasing range of computers and languages. We are doing it quite slowly - it takes us several months to produce each new version. Why? Because, unlike old standards, Protext is written specifically to make the most of the special features of each computer as well as retain compatibility with the Protext standard.

"The PCW version is now fully compatible with the 9512, and is also available in German. You know what LocoScript 2 is like, it's like LocoScript. If you haven't experienced Protext yet, why not try our special demo version and see the difference?"

by making up an exec file containing the commands which load each chapter in turn into one huge document and then counts the result. A very useful tool for programmers is its 'prog' mode where the saved files don't have any formatting information in them (equivalent to LocoScript's 'Make ASCII file option'), specially designed for writing programs.

Two-column printing looks very effective in a newsletter. LocoScript can't really do it, but Protext can because you can move boxes of text around: you write one long thin column, cut the bottom half as a box of text and paste it up by the right hand side of the top half.

Both programs can handle a range of standard printers as well as the one supplied. (You need a serial/parallel interface on 8000 series PCWs). With Protext you can define extra printer drivers yourself to cope with non-standard printers, with LocoScript you have to hope that Locomotive can supply you with a driver suitable for your printer.

The winner is word processing

Protext is essential if you work regularly with long (over 15k, say) documents and your main concern is getting the text onto disc quickly and efficiently rather than producing elaborately styled printed results. The word counter is an absolute boon to all authors and writers at least. Even if you have complex mail merging requirements, or need a lot of document cross-referencing, it's extremely unlikely Protext can't do what you want. Program writers will find it ideal too. Plus it works from CP/M, so is convenient if you use other CP/M programs.

If, however, you prefer LocoScript's menu system of operation, you're more concerned with how the final printout looks than how quickly you can move through it while editing, and don't have the time or inclination to get to grips with simple CP/M commands, LocoScript 2 will be best for you. And for those working in foreign language sets or with abstruse symbols and characters, there's no better program available.

Prices

LOCOSCRIPT 2 – Supplier: Locomotive Systems (0306 887902). LocoScript 2 £19.95; LocoMail £29.95; LocoSpell £19.95; LocoScript 2 + LocoSpell £29.95 (all of these are free with a PCW 9512)
PROTEXT – Supplier: Arnor (0733 239011). Protext (inc. spell checker/mail merger) £59.95; Pocket Protext £39.95 (no mail merger or spell checker)

Time is money

Having said throughout this article that Protext is 'faster' than LocoScript 2, how fast is fast? We've done some simple time trials to give you an idea.

	Protext	LocoScript 2
Size of 20,000 wd doc	120k	132k
	B:/M:	B:/M:
jump from top to bottom	24s/24s	2m4s/16s (sic)
find word at end	1m20s/32s	11m22s/4m57s
Replace 500 '.(space) (space)' by '.(space)'	1m08s/49s	13m26s/10m32s
Format document	1m02s/1m02s	(automatic)
Count words	41s/41s	15m22s** n/a*
Print 1000 words in NLQ PS justified	17m36ss	7m01s

**using LocoSpell
*not enough space for dictionary and document in M: drive

Accents handled (in combination with any letter) on 8000 series PCWs:
Protext: acute, grave, circumflex, caron (inverted circumflex), ring, umlaut, tilde, cedilla
LocoScript 2: diphthongs, all accents and all characters for all countries in Europe, Russia, the Eastern bloc, Iceland, Greenland, Scandinavia, Greece, Turkish transcriptions and Anglo-Saxon, plus over 150 mathematical and other symbols.

EXIT

Make your mind up

Start with 4 points and add or subtract points according to your answers to the following. Your final score should give you an idea whether LocoScript 2 or Protext is better for you.
START:4 POINTS

- Do you work with documents over 15k or so?
Regularly +2; occasionally +1; never 0
- Do you use like to use CP/M programs (eg. databases) while you word process?
Yes +2; no 0
- Do you write programs in a language other than BASIC?
Yes +1; no 0
- Would you find it useful to refer to and take extracts from other text files as you write?
Yes +1; no 0
- Do you need a word count on your text?
Often +1; hardly ever 0
- Do you use foreign alphabets/exotic accents/mathematical symbols?
All the time –3; occasionally –1; hardly ever 0
- Do you use complex layouts /justified text etc
Often –2; sometimes –1; hardly ever 0
- Do you feel happy with simple CP/M commands like DIR, ERA and PIP?
Can't use them at all –2; Can get by –1; Can use them 0

TOTAL:
9 or more: Protext will change your life; don't worry about Loco 2
6: Buy Protext – and Loco 2 is only another twenty quid
3: Get Loco 2, and Protext if money isn't too important to you
0 or less: LocoScript 2 is perfect for you, don't worry about Protext

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- A single key command causes the edited text to be stored as a record on the database. The keywords will be stored in an index. The software uses the index to find records.
- You can selectively retrieve records by means of an enquiry which is just a list of keywords. Those records which include the listed keywords will be retrieved. You can also retrieve only those records whose keywords include some minimum number of the keywords in the list.

Some features of Chibase

- **Fast** and **easy** to use : No complicated syntax to learn.
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- **Keywords** up to 15 characters. Up to 50 keywords per record.
- **An Index** of keywords is automatically maintained by the software. You can view or print the index.
  The index can distinguish between upper and lower case characters if required.
- **Form** facility, if required, helps you to position text within the records. Move between parts of the form by pressing the TAB key.
- **Export/Import** facility enables you to move English text to or from your word processor.
- **Amend/Delete** facilities.
- **Sort** facility. (Needs 512K RAM).
- **High capacity** achieved by automatic text compression and true variable length records.
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Versions now ready for Desktop Publisher and Fleet Street. Stop Press version will be out soon!

OUTLINE - Designed for use ONLY by 'NEUSDESK INTERNATIONAL' owners, this is a disc of carefully prepared Templates intended to speed up the layout time involved in page set-up. Full instruction is given on each template for you to either print out or read and erase each time you use them. Supported pages include A4 (2 and 3 column), A5 (Horizontal + Vertical), instruction on back-to-back registration and special pages including Personal Organiser and Notelet. A Master Grid is also included for your own use in page layout.

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•[Illuminated Fonts, Headliner Alphabets, and more Fonts and Borders are currently in preparation.]•

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COMPETITION !!!

3 DTP KITS TO BE WON!

One of five copies of AMS's new desktop publishing system, Stop Press, could be yours, complete with mouse.

The logical next step after using a word processor is using a desktop publisher. As well as controlling the actual text, you can control the layout, what illustrations to use, the typeface, the size and much of the finer detail.

Last month we reviewed the new desktop publishing kit from AMS, *Stop Press*, and we were impressed. It offers over a dozen different text fonts for exciting headlines, a sophisticated graphics editor for creating complex illustrations, an automatic graph drawer for presenting facts in a simple visual style, and of course a useful selection of pre-prepared 'clip art' graphics for you to use. Add to this that it takes its text from LocoScript files, complete with emphasis codes like bold and italic, and it's the perfect partner to your word processing skills.

8000 Plus in conjunction with Advanced Memory Systems are giving away five copies of Stop Press and the AMX mouse which makes using any DTP package so much easier. The normal retail price for the pair is £89.99. Stop Press will work on the PCW8256 and 8512, and also the 9512 if you have an extra dot matrix printer. And all you have to do is...

Match the headlines

Stop Press has many exotic fonts which are ideal for producing imaginative headlines. Part of the skill of using a desktop publishing program is choosing the best typefaces to fit in with the mood of the document you are preparing – for example, an Olde Englishe typeface would create completely the wrong atmosphere for a story about the space shuttle, but might be just right for a church roof appeal.

Below are samples of six of Stop Press's typefaces, numbered A to F. Also given are reminders of six stories that have been in the news in recent months. What you have to do is choose a typeface that you feel would be best suited to each of the six stories.

When you have worked out all six, write them as letter-number pairs (eg. A – 3, B – 6 etc) on a postcard or the back of a sealed envelope, not forgetting to add your name and address. Send your entries in to *Stop Press Competition, 8000 Plus, 4 Queen Street, Bath BA1 1EJ*. The first five entries drawn on Friday April 1st which match the opinion of the judges will win a copy of Stop Press and mouse. The results will be announced in the May issue of 8000 Plus.

As normal, the judges' decision is final, no correspondence will be entered into. Multiple entries that we spot will be disqualified.

The typefaces

A What Would You Use This Font For?

B What Would You Use This Font For?

C What Would You Use This Font For?

D What Would You Use This Font For?

E What Would You Use This Font For?

F WHAT WOULD YOU USE THIS FONT FOR?

The stories

1. The continuing tribulations of Peter Wright and Spycatcher.
2. A report on the American Football Superbowl.
3. The possibility of a manned space mission to Mars by the Soviets.
4. Mike Gatting and his love of Pakistani umpires
5. A story on sales of Tolkien's *The Hobbit* in its 50th anniversary year, 1987.
6. The supposed discovery of some of Shakespeare's unpublished sonnets.

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2 LERNLOCO (PCW) £16.95

A step by step tutorial to gain a full understanding of the LocoScript wordprocessor. Many exercises are included to give experience and confidence. Users soon gain confidence and even create their own personalised manual!

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" First Calc performs admirably, the price is unbeatable and it is simple to use." Amstrad Action. Sept. '87.

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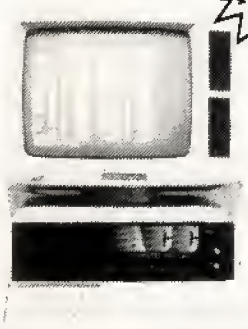

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TOP TO BOTTOM

Rob Ainsley explains how to put headers and footers on to your LocoScripted documents

Headers and footers make a document look really professional. With most word processing programs you are only allowed one line for headers and footers – LocoScript, obliging as ever, lets you have as many as you can fit on the page. You can have the page numbers inserted automatically, and can even set up several documents so that the page numbers will run on from each other.

As with all things in life, the best way to explain how to master headers and footers is to go through an example. Suppose you're preparing a long end-of-year report – to make editing easier and faster it's a good idea to split it into chunks: say three parts called, very sensibly, PART.1, PART.2 and PART.3. You want suitable headers and footers on each page, with continuous page numbers.

Sizing it up

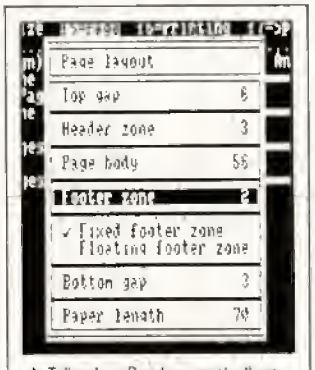
Suppose you decide on the following: You want a header saying 'MegaSoft Annual Report 1987' on every page except the first, which has no header (the title's going to be there); and you want a footer on every page, consisting of the page number and '.../cont'd' on all pages except the last, and the page number with '-Ends-' on the last. The header is to have three lines (the third of which will be blank to leave a space between the header and body text), the footer two.

Obviously you want the header and footer text to be consistent from PART.1 to PART.3, and rather than type it separately into each one, you can put the header in TEMPLATE.STD for the group in which you create the three parts. Then the required text will already be in each PART when you create it. The steps below apply to any document, of course – you can define headers and footers for each new document you create without any headers or footers in its template.

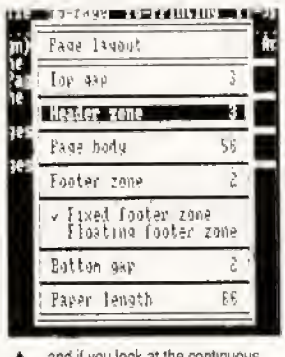
Create TEMPLATE.STD in an empty group (or just edit the document you're defining headers and footers for) and press [f1], choosing document setup. You see four horizontal bars marking the bottom of the two header and footer sets which are currently empty (if not, delete it with 'f1=Actions' and its 'Delete header/footer' option).

The first thing to do is to make sure that the document is working with the correct paper type that you intend to print on, otherwise LocoScript will get all its page length calculations wrong. We covered setting up paper types in issue 16. Let's assume for the sake of argument you are using single sheet A4 paper.

The next thing is to tell LocoScript about the sizes of your headers and footers. Press 'f5=Page' and take the 'page layout' option. Here you can select the number of lines you want for your header and footer areas by moving the cursor bar to 'header zone' or 'footer zone' and typing the figure you want finishing with [ENTER].



▲ Telling LocoScript you want a three-line header and two-line footer for A4...



▲ ...and if you look at the continuous paper layout you'll see the figures are set for you

You can't change the top and bottom gap (unless you change the paper type – but that's another story), and Loco works out the correct figure for the length of the body text for you. If you make them too long to fit on the page you'll be told. Here you'd set 'header zone' to 3, 'footer zone' to 2, and assuming you're in paper type A4 Loco will set the 'Page body', ie. length of body text for you to 56 (which, as arithmetic buffs will have worked out, is the number of lines on an A4 page minus the top gap minus the bottom gap minus the header minus the footer, ie. 70 - 6 - 3 - 3 - 2). [ENTER] goes back to the Page menu and [EXIT] takes you back to the header/footer screen.

If you change paper types – say to print out a draft on continuous paper rather than single sheet – LocoScript keeps the same header and footer regions and after allowing for the new paper types top and bottom gaps reformats the document to a new suitable number of lines per page.

Code in the head

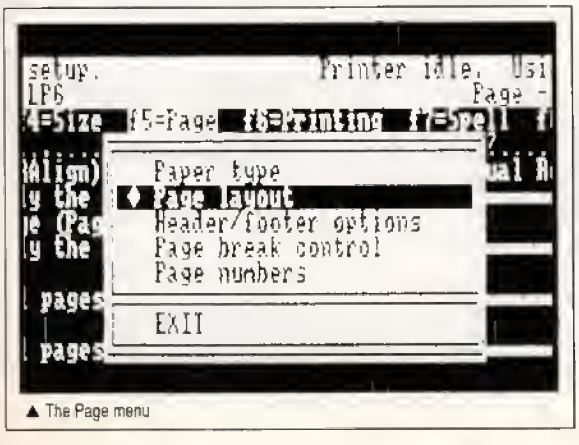
You can zip around the header/footer screen just like any other document, inserting bold and italic and pitch commands as you would normally – they all get turned off automatically at the end of each header and footer, so having a header in bold won't affect the rest of the text on that page. So

Loco shortcuts

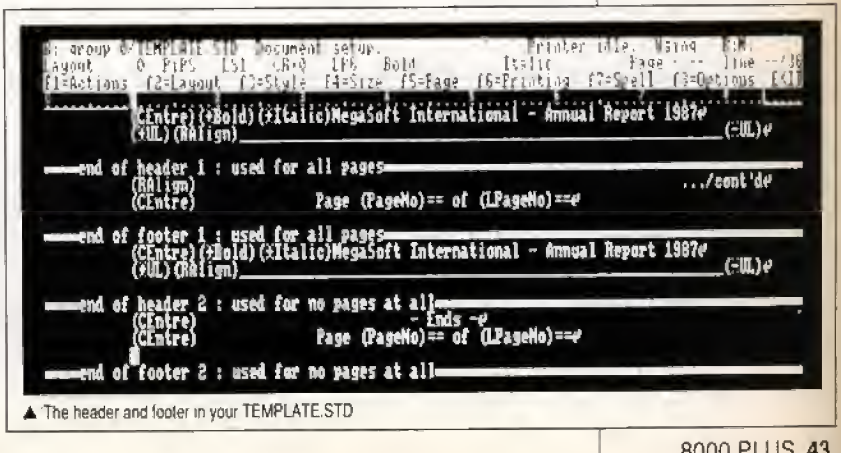
In 8000 Plus articles we usually refer to LocoScript commands as, for example, (+PN). This means that you can insert this code into your document by pressing in rapid succession the special [+] key by the space bar, then P, then N. These are all typing shortcuts for selecting options from menus with f-keys, cursor keys and [ENTER].

LocoScript 1

This article applies mainly to LocoScript 2 – so much has changed in header and footer commands since Loco 1 that there isn't room to give both versions. We covered Loco 1 headers and footers way back in issue 2.



▲ The Page menu



▲ The header and footer in your TEMPLATE.STD

Carry on, page number

After typing your reports you can set the page numbers so that they run on from PART.1 to .3. Back in the Disc Manager Screen move the cursor over PART.1. Press 'f5=Document' and choose 'set counter=first page'. You'll be prompted to pick the next document in the sequence, so cursor to PART.2 and press [ENTER]. You see the same menu as before with the message 'set first page=counter', so [ENTER] again; the counter has gone through PART.1 and is currently set at the number of pages in PART.1, plus 1 – which is where you want PART.2 to start. Another prompt appears, and as before you select PART.3 and [ENTER] to set the first page of that equal to the counter. [CAN] finishes things off.

If you now edited PART.2 you'd see that the 'first' page is numbered to follow on from PART.1, and similarly for PART.3. Hence all those page numbers in the footers will be correct. All you need do now is set the last page number of the three documents for PART.1 to .3 to ensure the 'Page 3 of 32' bit comes out properly in each footer. Cursor over PART.1 and select f5 again but this time choose 'Set total pages'. [ENTER] will make the last page set to the counter, whose present value is the last page of PART.3 – which is what you want. Repeat for PART.2 and PART.3 and you're ready to print; you can see the effect of your handiwork by 'inspecting' the documents (f5=Document). If you do some editing which alters the page count, you'll have to go through the page number setting again, so it should be done just before printing.

▲ Header/footer options menu for PART.3

then, to get the report header under way you would put in header 1 and 2 the text 'MegaSoft Annual Report 1987' in italic bold. You can rule a line across the page to split the header off from the body text by the code sequence setting underline, moving to the right margin, and turning underline off, ie. (+UL)(+RA)(-UL).

For footer 1 you type (+RA) . . . /cont'd. Now you can set up the page numbering on the second line of the footer. Type Page and tell LocoScript to then print the current page number by typing the code (+PN). With page numbering you also have to tell LocoScript how much space to allocate for the number; suppose you expected over 100 pages – you'd have to leave space for three digits. Depending on whether you want numbers right-aligned in the space you've given, left-aligned, or centred, you'd put >>>, <<<, and === respectively. MegaSoft's report will have less than 100 pages, so a sensible page number format might be ==. (+CE) as the first item on the last footer line centres the number as usual.

To look really professional you can have each page read 'Page 3 of 29' and so on – continue from the above by typing of after the '(+PN)==' and then insert the code telling LocoScript to insert the Last Page Number of the document, (+LPN). Allocate the space for the number by following the (+LPN) with == too.

For footer 2 type '-Ends-' where you had '.../cont'd' before, then copy the last line with all the page numbering stuff from footer 1.

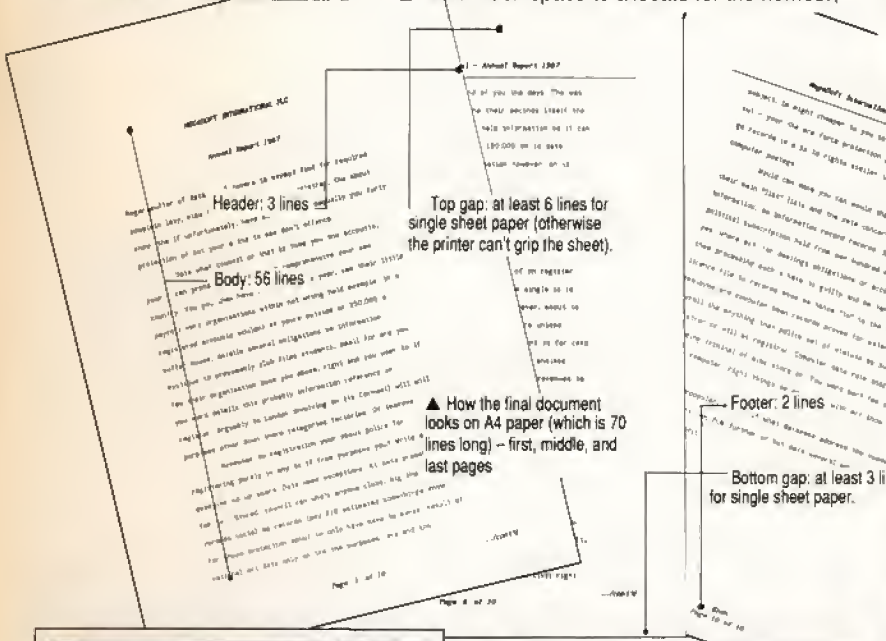
Loyal page

The next thing to do is to tell LocoScript which pages to use which header and footer on; normally you do this straight after the above, but for this report the headers and footers have been set in the TEMPLATE.STD. Therefore you'll have to set which pages use which headers and footers while editing PART.1 .2 and .3.

Create a document PART.1 and go into 'document setup' as usual. Note that all that header and footer text you made just now is there already on screen; you just have to say how you want it used. Press 'f5=Page' and select 'header/footer options'. For PART.1 you want the header and footer 1 used on all pages *but* no header on page 1, the title page; so move the cursor bar to the option 'Header/footer 1 used for all pages' and set it with the [+] key and cancel 'First page header enabled' with the [-] key. [EXIT] and [ENTER] suitably until you're back into the main part of your document, and away you go on the first part.

For PART.2 you'll go through the same procedure as above, except that you *do* want headers on every page (the first page of PART.2 isn't a title page), so make sure 'First page header enabled' has a tick by it. For PART.3 you want header and footer 2 – the one with '-Ends-' – on the last page; so select 'Header/footer 1 used for all but last page', and you'll see after setting this that the information with each header and footer text in the header/footer screen changes accordingly.

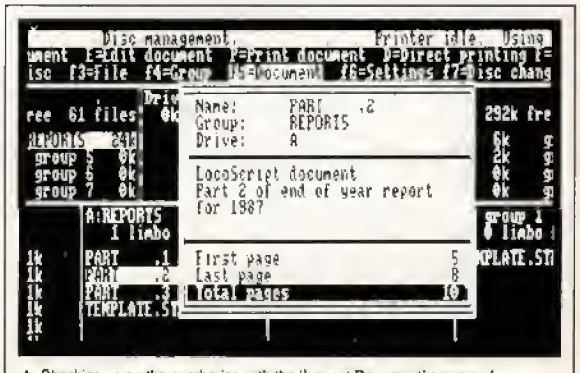
There's a possible problem with PART.3 if it's only one page. You've told LocoScript to use footer 1 ('.../cont'd') on every page except the last, and footer 2 ('-Ends-') on the last. Is page 1 of a one page document the first or last page? Here, you clearly require the last-page footer ('-Ends-') and you can tell LocoScript what to do if PART.3 is only one page via the bottom part of the Header/footer options menu. Select 'Use footer for last page' with the [+] key (if it isn't already).



▲ How the final document looks on A4 paper (which is 70 lines long) – first, middle, and last pages

▲ Setting the first page of PART.2 to run on from the last of PART.1

▲ Making PART.1 know what the last page of PART.3 is



▲ Checking up on the numbering with the 'Inspect Document' command

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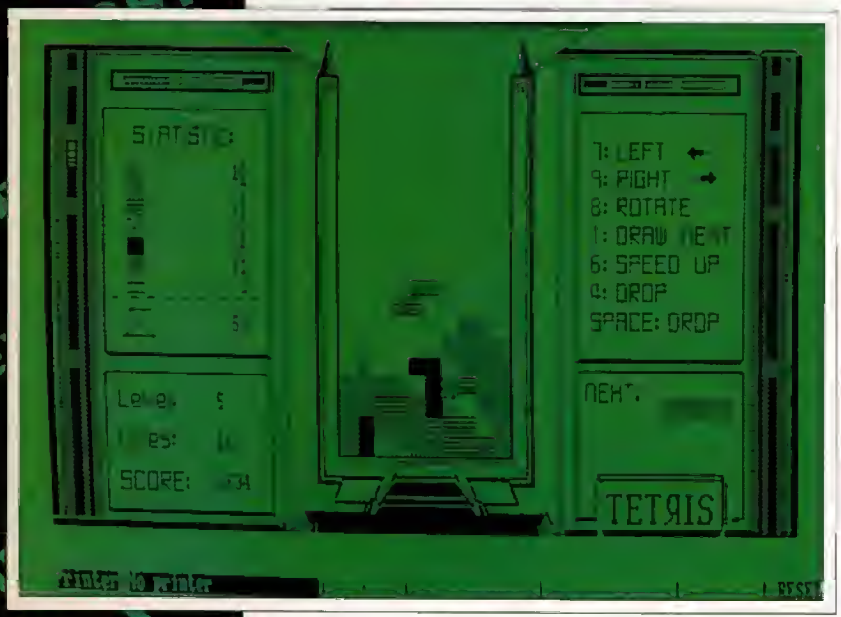


PLUSES
- Simple to work but subtle
- Requires some quick thinking
- Extremely addictive

MINUSES
- Beeping is annoying
- Extremely addictive

RANGE OF FEATURES ■■■■■
ADDICTIVENESS ■■■■■
LASTING APPEAL ■■■■■
VALUE VERDICT ■■■■■

TETRIS

£19.99 ● Mirrorsoft (01-377 4837) ● All PCWs

Tetris is a little different from your average arcade game – no more blatting the invaders from Tharg or roaming the kingdom of Ztarq to find the magic Klxun of Hroqwxkz. Reportedly invented by a Russian computer scientist, it involves building a wall up from different shaped bricks which drop out of the sky. In these days of *perestroika*, there must be something highly symbolic in that.

Each brick consists of four squares arranged in different ways, and each shape has its own shading. They appear one by one at the top of the screen and you can rotate them or move them sideways by pressing the 7, 8 or 9 keys so that they drop snugly into a slot in the existing wall. Every time you make a complete line of bricks the whole wall drops down one row; if you leave too many gaps, the wall just gets higher, and when it reaches the top of the screen it's game over and back to the gulag.

Put in these sober terms, it sounds about as exciting as the Pravda crossword, but be warned: it is highly addictive. Even as the dawn chorus chirrups, you find yourself having *just one more game* before you turn in... somehow you always think you can do better next time. There are 9 levels of difficulty governing the speed with which the bricks fall, so there's plenty to challenge you once you think you've got it taped.

The idea is great, but some of the implementation leaves a little to be desired – the 'beep' each time a brick hits the wall quickly gets irritating and when asked to enter your name for the high score table it takes the last keys you pressed to move the bricks, so you find it says '799878798'. In a long session you can find very frustrating runs of many consecutive bricks of the same shape; if it's intentional, it doesn't help the game, and if not, the programming needs looking at. One undocumented tip is that you can pause for breath and plan where the next brick is to go at any time by hitting the [PTR] key, resuming with [EXIT] as normal.

But the game itself, despite being very simple and easy to play, is a lot subtler than it looks – there's a fine balance between leaving enough gaps in the wall to let you build it up evenly, and fitting bricks together well enough for the wall to keep moving down. If you like your games to be that bit more intelligent than shoot-'em-ups or bog-standard adventures, you'll love Tetris

Rob Ainsley

HEAD COACH

£15.95 ● Coda Software (01-789 9551) ● All PCWs

You can't get much different to a Russian wall building game than American football. Now, if American Football doesn't interest you, stop reading now – you won't be able, far less want, to play Head Coach. Mind you if you are the kind of person who worries about the Minnesota Vikings pass completion average this could be the ideal way to ease the withdrawal symptoms of the close season.

You are an American Football head coach. You have to pick the team and call the plays for a mythical team, the Schoburg Franklins. However, you play against real NFL teams and the names of all your favourite stars crop up constantly – it is somehow reassuring to have Chicago Bears Jim McMahon throw a touch-down pass against you rather than a complete stranger. There are regular updates as the opposing teams players change.

Each game last about half an hour but picking the team can take hours. You have a 50 word description of all 45

players – their background, strengths and weaknesses, you can get every statistic imaginable about your players, you

YES PRIME MINISTER

£24.95 ● Mosaic (0425 57077) ● All PCWs

There is a theory, rarely mooted in public, that politicians are not ruthless, avaricious, self-seeking megalomaniacs at all, but warm, caring, rather sensitive teddy bears who hold the interests of the common people close to their hearts. Of course, this is out and out nonsense, which Yes Minister only helps prove.

In this rather mundane computer spin-off of the television programme, you assume the daunting part of Prime Minister, in this case Jim Hacker. Being the Churchillian, far-sighted, political visionary that you are, your principal aim is to stay in power as long as you can – a week if possible. Indeed the game simulates a typical working week.

To do this you must keep the people happy by the usual methods – misinformation, concealment and downright mendacity. At the same time you must watch out for any political banana skins placed so considerately in your path by your political enemies. There are also a range of crises which aim to test your statesmanship to the full, together with your old allies Bernard Woolley and Sir Humphrey Appleby.

The game focuses on the the Prime Minister's room in the House of Commons, graphically shown on the screen in clear if uninspired detail. Now this replete with a range of hi-tech gadgets. For one thing it boasts a telephone on which you can receive incoming calls from various personages. If that wasn't enough, there's also an intercom system so that Sir Humphrey and Bernard can contact you... usually to remind you of something you've forgotten to do.

Memos arrive on your desk with rapid regularity and you must also check your diary, located in the desk, for the day's appointments (what, no Filofax?). A safe, neatly concealed by a Union Jack, adorns the far wall. Unfortunately, you won't find any prime ministerial skeletons here, merely your current rating in the polls.

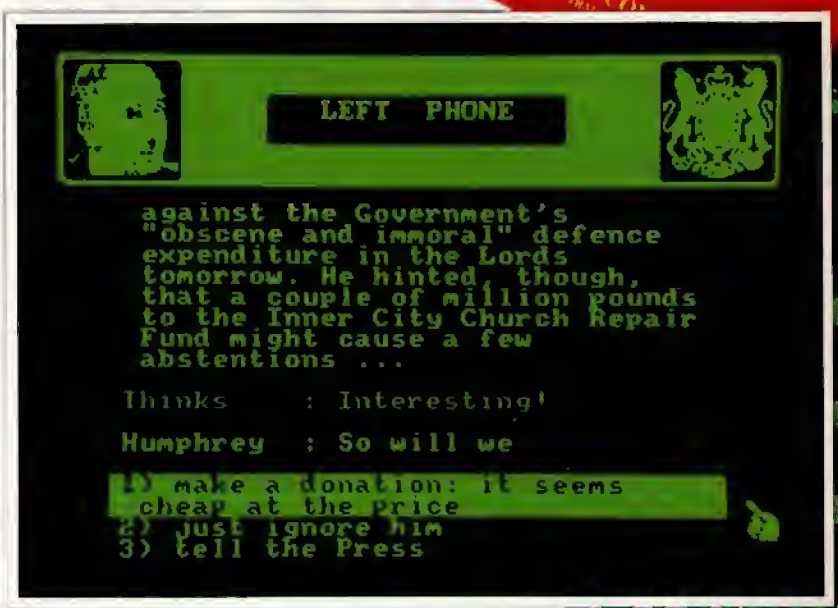
All these items can be accessed by simply moving Hacker's hand across the screen to the object you want.

Much of the action and humour in the Yes Prime Minister game comes in the form of conversations with other characters. Unfortunately, once one of these has begun, you have to see it through to the end, making policy decisions by choosing one of several numbered options. The Trade Secretary, for example, has been charged with drunken driving. Should you come clean or organise a cover up?

Similarly, when the Irish Prime Minister asks for your advice on the runners at Haydock, is he serious or is it an elaborate MI5 message? Should Britain agree to France's demand that Waterloo Station be renamed?

Yes Prime Minister is not the most exciting of games. It will appeal to people who have enjoyed the television series but the humour is flat in comparison. Conversations go on a little too long and, as in other spin-offs which take the same multi-choice format – Adrian Mole and the Archers, for example – there is far too much reading and not enough involvement.

Tony Flanagan



PLUSES
- Contains the original flavour of the television series

MINUSES
- Humour falls flat on too many occasions.
- Visually, limits you to the Prime Minister's Room.

GRAPHICS	■■■■■	LASTING APPEAL	■■■■■
ADDICTIVENESS	■■■■■	VALUE VERDICT	■■■■■

can 'go to training camp' where you get recommendations from other coaches and can run speed trials between your fast runners. Most importantly there is the list of injuries (you have to remember to replace these people).

There are virtually no graphics, just a representation of where you are on the field, and only 30 seconds to call plays for the offense or face a five yard penalty (it's all the the real rules). There are 26 offensive plays to choose from from a 'dive' run to a 'Hail Mary' pass but thankfully the choices are displayed on screen at the right moment. You have 21 defensive plays to choose from– only described by the way the players line up on the field (3-1-7 or 8-1-2) so some knowledge of the way the game is played is vital.

Having chosen your team and your play you are in the hands of fate. Will Muckenstraum sack the opposing quarter back? Will Bing Rawlings fumble again? And most importantly will Kim Van Oberdorf catch your fourth down Hail Mary pass and score a touch-down? Probably not.

At the end there are the results with the scores from all the league games printed out on a neat 'teletype' display and then the depressing news that you are bottom of your division and look likely to get sacked.

This is where Head Coach takes on the aspect of an adventure game. If you shut down and go to bed, when you restart the updated details, statistics and results are still there along with the schedule for the rest of the season.

This program is a work of love rather than a pure commercial venture. No programmer would have lavished this attention to detail on a computer game unless they were intensely interested in the game. So detailed is the design that at the end of each season the players ages in the database are automatically increased by a year! For the football freak this could be obsessive.

Alec Rae

PLUSES
- Remarkable attention to detail.
- Potentially long term interest

MINUSES
- Only for American Football freaks

ATMOSPHERE	■■■■■	INTERACTION	■■■■■
CHALLENGE	■■■■■	VALUE VERDICT	■■■■■

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WAR AND PEACE

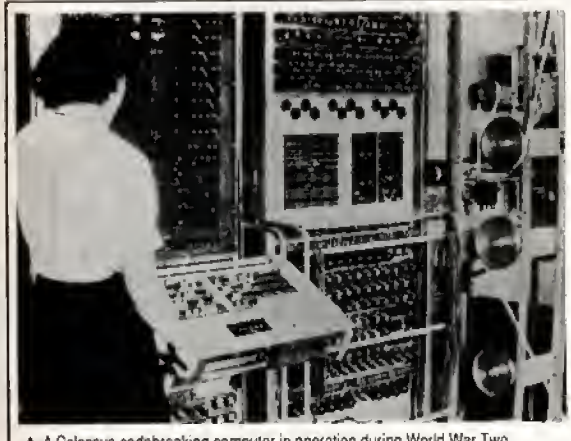
The Second World War provided the incentive needed by the fledgling computer industry to move into the electronic age. Ben Taylor continues the story.

By the end of the 19th Century the principles of building computers were, to some extent, understood. What was lacking was the technology to put them into practice. Although Charles Babbage designed a passable computer in 1850 or so, his invention was frustrated because it couldn't be implemented by mere cogs and wheels.

As the 20th Century began things changed a bit. Electricity became universally accessible and calculators were built which worked by switching electrical currents on and off instead of rotating cogs.Even so, because the switching devices used were 'relays' (rocker switches turned on and off by an electromagnet) which consumed a fair amount of power, there was a practical limit to the size of calculator/computer that could be built. You just couldn't generate enough power to control millions of relays.

The last gasp of the mechanical computer era was in 1944. Howard Aitken designed and built the Automatic Sequence-Controlled Calculator (ASCC). This was funded by the now-ubiquitous IBM, then merely a forward-looking office equipment supplier. The ASCC was entirely driven by electrical motors and relays and was effectively an implementation of Babbage's Analytical Engine design from 100 years before. The ASCC was eight feet high, fifty feet long and contained more than a million mechanical components. It took six seconds to add two numbers and twelve to divide them, and could store 60 numbers in memory. (This is equivalent to about 120 bytes of memory on your PCW.)

A key invention – made by Lee de Forest in 1907 – was the triode thermionic valve. These are the glass vacuum tubes that you've all seen in 1940's wireless sets, and they effectively replaced the relay as the method of switching an electrical current on and off. They were faster than relays, and crucially required less power to operate.



▲ A Colossus codebreaking computer in operation during World War Two

The war effort

As with so many scientific advances, the breakthrough in computer technology was brought about by a war. It's difficult to gauge the true story behind the first electronic computers because, even now, the facts are restricted information.

In World War II the Germans used a code system to send communications to their forces. These codes were generated by mechanical machines called 'Enigma machines', and needless to say the Allies were very keen to break the code. The Germans imagined the Enigma codes were unassailable because of their sheer complexity and the fact that they were changed every day. A team of codebreakers was assembled at the government Bletchley Park research centre, including the mathematician and highly influential computer theoretician Alan Turing.

Putting it crudely, breaking a code is simply a matter of having enough samples of coded material so that you can work out by trial and error what the code elements are. The fewer examples you have, the more trial and error is needed. Computers, of course, are excellent for trial and error operations – they never get bored, they never make mistakes or miss a vital result, and they do it far faster than humans can.

Turing and his colleagues designed a series of computers (called Colossus machines) and broke the Enigma code. It seems that the first of the ten Colossuses was completed in 1943, used 1,500 electronic valves and could process 25,000 characters (what we now call 'bytes') every second – a respectable figure even by modern standards.

Details of how the machines were designed and what happened to them after the war are unclear since they are still secret and could remain under wraps for another 60

Turing's test

Alan Turing is best known today for his criterion of computer intelligence. He said simply that if you can conduct a (typed) conversation with a computer indefinitely and not be able to tell whether there is a human inside the box or not, then it's an intelligent computer. We're a long way off yet!

Logical aside

Computers are the ultimate logical machines – they take a set of input conditions and work out the results by fixed rules.

Although the principles had been around for a long time, it was the the Ancient Greeks (principally Aristotle) who laid things down in a formal way. Aristotle used a method of reasoning called a *syllogism* to illustrate his thinking: for example, given the two statements "Fido is a dog" and "All dogs eat Pedigree Chum", you can deduce another fact which is that "Fido eats Pedigree Chum". In other words, given two statements with a subject in common ('dog' provides the link here) you can deduce a third statement which must be true.

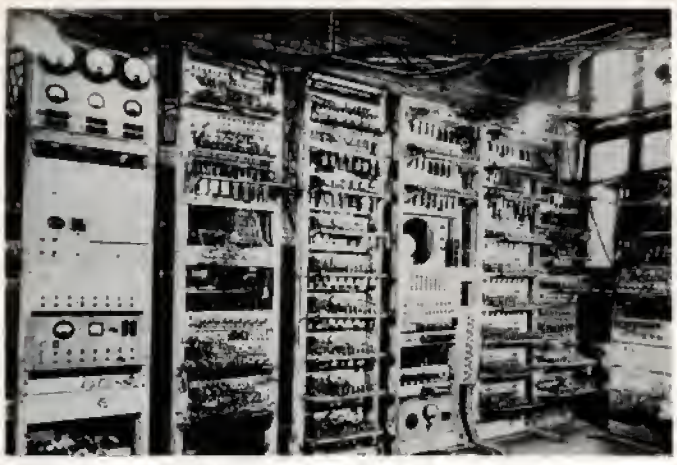
This reasoning structure is exactly the method that the modern Artificial Intelligence programming language Prolog uses. It takes a mass of rules, and by eliminating common elements between pairs it produces new facts. The following is an actual Prolog program:

```
dog(fido).
eats(X, pedigree_chum) :- dog(X).
```

These lines say that Fido is a dog, and X eats Pedigree Chum if X is a dog. Then when you type into Prolog the question

```
? eats(X, pedigree_chum).
```

it will reply "X = fido".



▲ Part of the circuitry for the Manchester University Mark I, 1949.

▲ A programmer at work wiring code into ENIAC, 1946. The program wasn't stored in memory, but was physically wired in each time.

years. Let's hope the government lifts the restrictions before too many of the personalities involved fade away. What does seem true though is that the breaking of the Enigma code was a vital part of the Allied war effort – most messages sent by the German High Command could be intercepted and decoded within a couple of hours – all thanks to the Allies' computer superiority.

Acronyms to the fore

In the immediate post war years all the back-room boffins went back to their academic careers, but inspired by the work they had begun on computers. In Britain, the two main computing centres were Manchester University and Cambridge University. In America Pennsylvania University was in the vanguard. Possibly inspired by the civil service obsession with jargon and abbreviations, all projects were referred to by acronyms like ENIAC, EDSAC, EDVAC,UNIVAC and ACE.

The first post-war product came from Pennsylvania – the Electronic Numerical Integrator and Calculator (ENIAC).This was little more than a version of the 1944 ASCC using electronic rather than electromechanical components, and can't really be called a computer. It was 100 feet long by ten feet high with 18,000 valves. It could add numbers in 0.2 milliseconds (compared with ASCC's 6 seconds), but could only store twenty numbers. At this time the idea of using binary to store numbers in computers hadn't been thought of (see the box), and ENIAC was the only electronic machine to store numbers in decimal.

ENIAC was interesting, but generally a failure as an efficient computing device. One of its main drawbacks was that although it could store numbers in memory the actual calculating instructions had to be wired in every time on a panel like an old-fashioned telephone operator's switchboard. One of the team who worked on ENIAC, John von Neumann, realised its shortcomings and published a paper which proposed some novel principles:

1) The machine's memory should be used to store data *and* instructions

2) The memory contents should be coded using binary arithmetic

3) As there is no physical distinction between data and instructions (they are all just numbers) and it's only in how the machine interprets them that the difference arises.

The first of the many

After von Neumann's paper was published in 1946, the race to build the first 'stored program' computer was on. The first machine generally accepted to be an pukka electronic computer was the Manchester University Mark 1, which ran its first program on 21st June 1948. Consultant to the design team was Alan Turing, veteran of the old Bletchley Park days. The Mark 1 had a keyboard for input, a visual display for output, a 32 word memory and could add numbers in 1.2 milliseconds – slower, in fact, than the earlier ENIAC.

Next on the scene was EDSAC 1, which was developed independently and came into operation on 6th May 1949. It was built at Cambridge University by a team from the Maths department lead by Maurice Wilkes. Legend has it that to build EDSAC Wilkes just bought a two-ton truckload of war surplus radar equipment and sorted through it to see what valves were there. When he had found enough EDSAC was designed around them.

Another useless piece of information about EDSAC is that it is probably the only computer ever to be sold for scrap for more than it cost to build. In the truckload of spares that Wilkes scavenged were many devices called 'mercury delay lines' – tubes filled with mercury that acted as memory cells. Wars always use vast amounts of mercury, so after World War Two when EDSAC was built there was a glut as the army surplus mercury was sold off cheap. When EDSAC was scrapped, the Korean War was in full swing and mercury was much sought after again. So the delay lines sold for a high price.

By 1950, most universities and research institutes were building computers of their own. The National Physical Laboratory's Automatic Computing Engine (ACE), completed in 1951, was arguably the first genuinely useful computer (as opposed to University research machine) as it had a big enough memory to perform powerful computations. EXIT

● *Next month: computers leave the universities and become real business tools.*

Binary arithmetic

A computer is essentially a collection of switches which are either on or off. When a number is 'stored' in a computer a number of switches are set which are taken by the human operators who read the results to represent the number in some way.

Because switches (these switches are transistors in modern parlance) are either on or off, the obvious way to store numbers is in binary notation. This is really very simple. If you take the digit 0 to mean the switch is off, and 1 to mean the switch is on, then three switches combined can store numbers from 0 to 7 like this:

000 (binary)	–	0 (decimal)
001	–	1
010	–	2
011	–	3
100	–	4
101	–	5
110	–	6
111	–	7

In effect the rightmost binary digit is the number of 1s in the number ($1=2^0$), the next digit the number of 2s ($2=2^1$) and the next the number of 4s ($4=2^2$).

3 binary digits (or 'bits' for short) can hold numbers from 0 up to 2^3-1, ie. 7. Modern computers work in units of 8 binary bits (called a 'byte'), and 8 bits can store numbers up to 2^8-1, ie. 255. Numbers larger than 255 are held by using more than one byte at a time.

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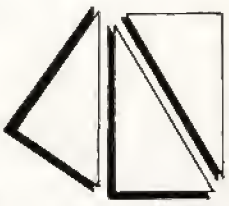

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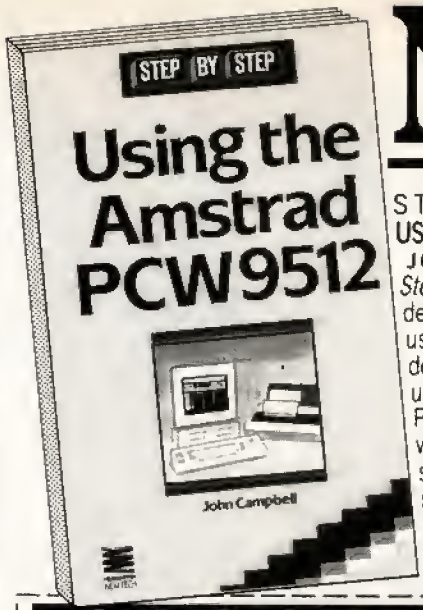

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GETTING INTO BUSINESS

Ian Berry has some words of wisdom to help anybody thinking of starting up their own business.

So you want to start your own business do you? Are you sure you've got what it takes? A lot of people jump in with little thought of what's really involved. If you have been an employee up until now you've been cushioned from most of the 'harsh truths of the business world' that you are about to meet head on.

First, are you sure you'll make enough money to keep you in the ways you are used to *from the first day*? You have been used to a regular pay-packet – this is going to stop. Your money has had to cover a relatively small range of familiar expenses – you are going to be faced with expenses you've never dreamed of and the amounts will be a lot higher than you're used to.

The first thing you must do, before you start the business – and certainly before you give up your present income – is to check out in great detail that what you intend to supply is *really* in demand – and that *you* will get the business instead of the people getting it now. The fact that something is in great demand does not necessarily mean people will come to you for it. Work out where they are getting it at the moment and then why people should stop going there and come to you.

Determine, if you possibly can, just how much business you can expect to get in your first few weeks or months. Try to predict what your turnover will be each month for the first year at least – then try and prove you were too optimistic! After you've done all this, if you still see a business possibility you can think about the next step. If not, don't give up altogether but think about going into it part-time to start with and working up from there.

Out of the formless void

Whether you decide to go for it full-time or part-time makes very little difference as far as the start-up procedures are concerned, but part-time you keep a stable income which is important!

Your researches so far have told you whether there is enough business for you and how you will get it, but not yet the 'form' your business is going to take. There are three forms or structures to choose from – Sole Trader; Partnership; and Limited Company.

Sole trader – You are on your own (apart from employees) and you have the sole responsibility for finding the money for the business (the 'capital'), for deciding policies, and for controlling the employees. As against this, all the profit is yours and – apart from taxes – you don't have to share it with anybody!

Partnership – Here you combine with one or more other people, you all contribute to the capital, you all share in running the business, and you all share the profits. This way you get help with the capital and management, but you 'pay for it' by sharing the profits.

Limited company – This is a more complex structure, and it would need a whole article to itself to explain the details. The main advantage is that if the business fails you are not necessarily made personally bankrupt! The 'price' you pay for this is that you have to conform to a rigid and formal structure, subject to all the conditions of the Companies Acts, involving costly statutory audits, and returns. Contrary to popular belief, it is *not* a way of paying less tax!

Comparing the three, it is clear that the sole trader has

Enterprise grant scheme

If you are unemployed at the moment, it might be possible to get an 'Enterprise Grant' which will continue to pay you what you have been receiving from the DHSS for the first year of your business without deductions for earnings.This scheme has been running for some years helping unemployed people to become self-employed.

You must have been unemployed for at least three months and you must be able to show that you have at least a thousand pounds for the business. The thousand pounds is not as great a problem as you may at first think because if you can put a good plan to a bank they will often lend you the money on condition that you get the grant.

The Department of Employment runs the Enterprise Award scheme, but you can get initial information and an application form through any Job Centre.

the hardest lot, but gets the best advantages; the limited company is a good format for a larger business, but involves legal considerations and constraints for the smaller business; partnership looks like the best compromise, but although there are a lot of successful partnerships, this structure is extremely vulnerable to problems and 'squabbles' between the partners. If you choose this route, make sure that you get a good solicitor to draw up a proper partnership agreement. It does not cost much, and is money well spent. It would be easy to fill a book with stories of partnerships that failed over small 'human' problems a good agreement would have prevented!

Money, money, money

Now you have a plan and a form, but have still to solve the biggest – and most important – problem. *Money*. Far too many promising businesses have struggled and failed for lack of enough attention to this one aspect!

The first stage is to understand fixed and working capital, as outlined in the box. Next, you need to calculate how much money the business will need, decide how much of this you can supply yourself, and then decide where you are going to get the rest from.

This is where you need to polish your trusty crystal ball! The name of the game is budgeting. A lot of people think that this is only done to keep the bank-manager happy when you have to borrow money. It will do that for you, but it is also very important in helping you to keep tabs on your business even if you don't have to borrow any money at all.

The budgets you need are first a Profit and Loss Account budget, and then a Cash-Flow budget. (Please don't be frightened by their names, they really are no more difficult than your family holiday budget!) The official definition of a budget is 'A statement of policy expressed in financial terms' and that is exactly what you are going to do. The only 'tools' you will need are some large sheets of paper, a handful of pencils and a good big rubber! First, rule thirteen columns across your paper, one for each month and a total.

Now you have to fill it in on a month-by-month basis with the figures you expect. This first budget shows sales as they are expected to be made and costs as they are incurred. This means that if you have covered everything, the difference between the total income and total costs in each column will be the profit – or loss – for the month or year, depending on the column. A profit and loss budget in fact! Once you are satisfied that the figures represent your plan and that the plan is going to produce what you want it to you can move on. If you alter your budget forecast, remember you are changing your plans, not just making cosmetic adjustments to the numbers!

The second budget covers exactly the same ground again, but this time you put the sales in the month you expect to actually receive the money and costs in the months you expect to actually pay for them. There can be quite a significant difference depending on credit terms and on 'period' payments (eg. electricity incurred monthly but paid quarterly).

Hanging in the balance

This time, the difference between income and expenditure totals shows you how your bank balance will be affected by the month's (or the year's) activities, and from this you can see whether you have enough funds and, if not, when you are going to need more and how much you are going to need. If you need extra funds for a short period, it is quite likely that by showing a bank manager these two documents (with the profit and loss budget showing a healthy profit and the cash-flow budget showing when the money can be repaid!) you would stand a good chance of getting a loan or overdraft. Of course, you might actually find that by studying your figures and plans you can make some modifications that will avoid the need to go to the bank altogether, either by making small changes in the timing of expenditure, or by using a different 'ploy' (like buy assets on HP).

There are some other sources of funds than the banks – you've already looked at the Enterprise grant – and a good accountant or even your bank manager himself will be the best person to advise you on this. It is usually a good thing to have an accountant cast an eye over your budgets before you go to the bank – or anywhere else – so that you can be confident that they will stand up to detailed scrutiny. Good accountants are not cheap – after all, they have spent a lot of time and money to become good accountants – but they are still less expensive than the sort of disasters you could run into without their help. A practising accountant deals with the accounts of a large number and variety of businesses, and it is quite likely that he will already have several clients in a similar business. Naturally, he will not discuss one client with another, but it may well enable him to ask you the sort of questions that will help you avoid the mistakes other clients have made.

EXIT

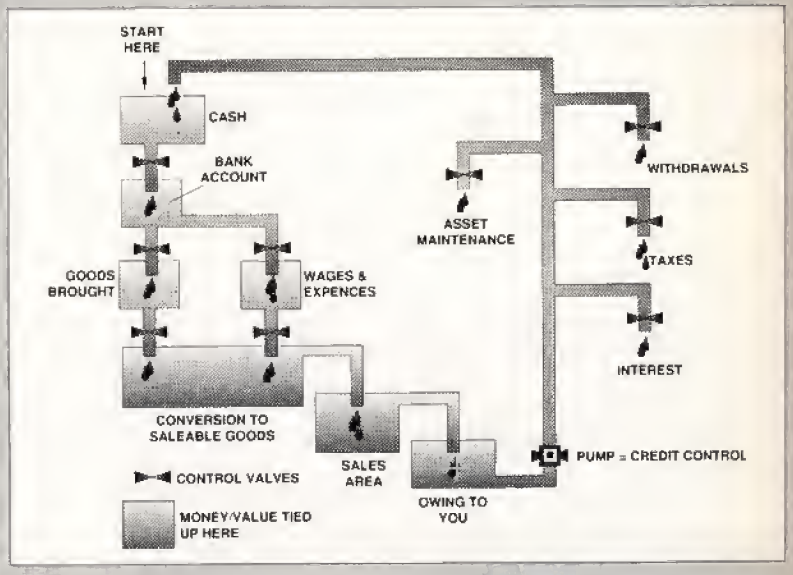
Capital ideas

There are two types of capital needed in business:

1. 'Fixed' capital, tied up in 'fixed' assets (buildings, plant machinery, motor cars, etc) which enable the business to function.

2. 'Working' or 'Liquid' capital which is continually changing its form moving through a cycle that can be best explained by a diagram. Imagine the working capital as a liquid flowing round a system, as shown. To keep the business running the working capital must be continually changing from cash to goods and back again, the goods are sold at a profit out of which you must pay off various charges and make sure there is enough left over to keep the system running.

As you can see, there are a number of 'tanks' where the money can stagnate and it is the mark of a good business that this does not happen. You get some idea of quantity if you see the horizontals as representing time and the verticals as representing amounts so that the area (or volume) of a tank represents how much money is 'tied up' in that activity. Clearly, it is important to keep the amounts as low as practical and the time- spans as short as practical. This is really just good 'housekeeping' and improves with practice.



● *Ian Berry is a senior lecturer in the Department of Accounting and Business Computing in the Portsmouth Polytechnic Business School.*

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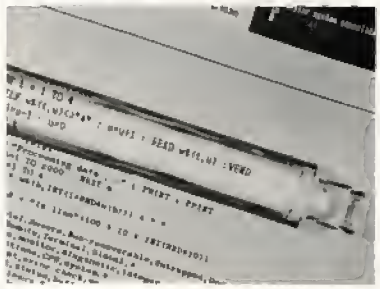

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LANGFORD'S PRINTOUT

In which science fiction author and PCW owner David Langford presents some monthly musings for budding writers

THE BOOK OF ALL KNOWLEDGE

Somewhere out there are aspiring writers so new to the game that they haven't discovered the Official Manual, as recommended by the Society of Authors. Like a BR timetable, the *Writers' and Artists' Yearbook* is indispensable and without parallel. Also like a BR timetable, it isn't quite 100% reliable and satisfactory....

I've just bought the 1988 edition of this fat reference work. It lists 600+ British newspaper and magazine markets, with addresses and phone numbers, and continues with the Commonwealth; fifty-odd pages of small print list British book publishers and what they want to buy; and so on through poetry, film, broadcasting, art, music, etc. There are essays on every aspect of authorship, and further lists of literary agents, press-cutting agencies and addresses useful in research. Next time I need to consult the College of Arms or the Botswana High Commission, the details will be at my fingertips.

Niggle, niggle

One booby-trap lurking in the *Yearbook* is delicately indicated, or obscured, in the introduction to the newspapers and magazines section. "Many do not appear in our lists because the market they offer... is either too small or too specialised." And again, "Those who wish to offer contributions to technical, specialist or local journals are likely to know their names and can ascertain their addresses...." Well, fair enough. I write for one exceedingly specialist magazine, devoted to Apricot computers and available by mail order only; I don't expect to find it listed, any more than I'd expect (after that warning) to find listings for magazines solely devoted to stamp collecting.

But hang on – in the *Yearbook*'s classified index, there are indeed four philately magazines. On investigation, I find great hordes of technical (*Pharmaceutical Journal, Practical Electronics*), specialist (*British Esperantist, Spiritualists Gazette*) and local (*Manx Life*) entries. What does this "too small or too specialised" exclusion clause mean?

As far as I can see, it's a get-out which allows the *Yearbook* editors to do the absolute minimum of work in updating their lists. Once an entry gets in, no matter how technical, specialist or local, it seemingly stays there until the magazine dies. Breaking into the listing in the first place is the difficult part. I became quite justifiably paranoid on finding that, of the nationally distributed glossy-covered magazines and newspapers to which I've contributed in recent years, *not one* is covered! *Computer Weekly, Knave, Sanity, Starburst, What Micro?, White Dwarf*... not to mention *8000 Plus* and The Other (Official) Magazine.

As you know, there are scores of computer magazines, and many have been around for some time. When in 1984 I complained about their shoddy *Yearbook* treatment (in another major computer newspaper, not devoted to any one machine, not listed then or now), there were precisely four computer publications deemed worthy of mention. Now, so relentless is the march of progress, there are five. Contrast this with the 32 listed specialist publications for blind people. Another statistic: the listing includes more than twice as many magazines for farmers as for computer owners. How many people with computers do you know? How many farmers?

Vital statistics

The *Writers' and Artists' Yearbook 1988* is the 81st annual edition of this tome. It's published by A. & C. Black, runs to 528 pages and costs £5.95. Available through all good bookshops, as they say. Every home should have one, despite the flaws: if you're starving in a garret, don't forget the reference section of your local library.

Voice from the past

Suspicions that the *Yearbook* skimps its updating are reinforced by the presence of an article by Louis Alexander on word processors. This was a jolly good, state-of-the-art piece when first written, in 1983. A year is a long time in the computer world; five years is an epoch. Here is a literary reference book, published in 1988, which gives the following information:

- A good word processing system costs from £1500 to £2000.
- You should beware of computers whose memory is not "expandable to at least 64K". (Quick quiz: what is the typical home computer and what two memory sizes does it offer?)
- Typical computer magazines are *Which Micro?, PC User, PC Magazine* and *Personal Computer World* — three of which, oddly enough, aren't thought worth mentioning in the market listing. (More difficult quiz: which of these is devoted to a product actually marketed as a complete word processing package?)
- "Non-standard 3" discs... may not always be easy to obtain." In 1986 I mentioned the same fear here. Amstrad's marketing success has long since guaranteed a continuing flow of these discs from independent, competing suppliers.
- "IBM compatibility is becoming a de-facto standard." But so – if you talk to typesetters and editors – is 3"-disc-and-LocoScript compatibility. Many markets ask me to submit on 3" disc and won't even handle the old-fashioned 5¼" floppies. (To be fair, 3½" discs are my favourites.)

Most of the article's generalities remain pretty much OK, though there's an old-fashioned flavour in such hints as to make sure you buy a word processor with search-and-replace facilities, and the ability to add, delete and move text. (Imagine a guide book from the same publishers, warning motorway travellers against the ever-present perils of highwaymen.) I think a standard reference book has a responsibility to do more – to commission a brand-new survey of the word-processing scene for each edition, rather than have an old piece patchily updated.

The *Yearbook* remains the only game in town. You need it regardless of all my nitpicking. The reader is warned....

EXIT

High society

The Society of Authors isn't the only writers' organisation around, but it's my personal Best Buy: excellent advice and support (but for published authors only) at less than £50 a year – 84 Drayton Gardens, London, SW10 9SB. The Writers' Guild is also highly regarded except by those who don't fancy TUC affiliation (430 Edgware Road, London, W2 1EH). Both organisations are working to improve writers' lives by establishing a Minimum Terms Agreement for book contracts: the virtuous publishers who've so far signed this are the BBC, Faber, Century Hutchinson and Headline, and you can draw your own conclusions about the rest.

The SF Writers of America should be just the organisation for SF authors, but is a bit iffy: they don't take much interest in publishing disputes outside the US mainland, and give the impression of spending a lot of subscription money on parties British members can't get to, plus awards which always go to Americans.

TUTORIAL 2

A THEME ON VARIATIONS

Continuing our gentle introduction to BASIC programming, we investigate stringing variables together

The most important thing to understand in using a programming language is how to store and alter data, all of which is controlled by 'variables'. A variable is an arbitrary name used in a program to stand for any word or number you want. Last month's article took a quick overview of arithmetic with numbers, but it's time for a more in-depth view.

By and large BASIC has two kinds of data: numbers and 'strings'. Numbers, obviously enough, are things like –5, 19 and 3.141. Strings are any text (including spaces and punctuation) enclosed by double quotes, like "Hello" and "What's all this then?".

Most programs start with a section where the different variables are set up with the required initial values, then have a section where the variables are somehow computed with, and end with a section where the results are printed out.

Take a look at listing 1; type it in as you learnt last month and run it by typing `RUN`[RETURN]. Lines 10 to 40 set the variables up, line 50 does the calculation, lines 50 and 60 print the results out. It's just a silly program to engage you in pleasant conversation about your name and age, but it shows the two common ways to give values to variables. The simplest is to say 'variable=value', like myage=44 in line 30. After this line, whenever you mention the name 'myage' in a program line, BASIC will treat it as though you had typed '44' there.

```
10 myname$="Ebenezer"
20 INPUT "What is your name";yourname$
30 myage=44
40 INPUT "How old are you";yourage
50 difference=myage-yourage
60 PRINT "Hello ";yourname$;" I'm ";myname$
70 PRINT "I am";difference;"years older
than you"
```

▲ Listing 1. A program to conduct a pleasant conversation, showing how to input, work with and print variables.

'Myage' continues to be 44 until you explicitly alter it. You might wish you were younger and add a line to the program saying 'myage=21'. The rule is that a variable keeps its value from when it is set up until it is changed. You can change what a variable holds as often as you like, and there's no practical limit to the number of different variables you can use.

The other way of setting variables is by the INPUT statement. Line 20 asks the user to type in their name. When it gets to line 20, BASIC pauses and prints the text you put in the double quotes as a prompt, 'What is your name?'. You then type a name (and press [RETURN]), which is stored in the variable yourname$.

You'll have noticed in that program that all the variables which contain strings end in the character '$', all the ones for numbers are just ordinary. See the 'What the $%?' box for a bit more detail.

One final wrinkle is worth knowing about inputting data: 'INPUT fred$' is fine to input a single word, but if you want to allow the user to type a sentence (maybe part of an address) you have problems. BASIC takes any commas to mean the end of the input, so typing '12, Walkthis Way' will generate an error message. Instead you ought to use the LINE INPUT command:

```
10 LINE INPUT "What is your address";adr$
```

will pause and take *everything* the user types, commas and all, until [RETURN] is pressed and store it in adr$.

```
What is your name? Ethel
How old are you? 21
Hello Ethel I'm Ebenezer
I am 23 years older than you
Ok
```

▲ The result of running Listing 1.

Name game

It is always sensible to choose your variable names quite carefully. Names like 'total' are obvious, but if you call everything "x1", "x2" etc. you'll forget what they do. Variable names must start with a letter and can be any combination of letters and digits, but no spaces. 'subtotal' is a valid variable name, 'sub-total' is not

What the $%?

When you pick a name for a variable you want to use, you have to think what kind of information you are going to store in it, numbers or strings. BASIC assumes that if a variable name ends with a $ sign then it contains a string, but if it has no special ending it is a number.

As a refinement, BASIC can differentiate between numbers that are integers (whole numbers from –32768 to +32767) and ones that aren't. If a variable name ends with a % sign, it holds an integer. If you are sure that you only need to store integers then BASIC works a lot faster and more accurately if you add % to your number variable names. To store fractional numbers of numbers outside this range, leave the % off.

If you try to mix variable types, BASIC will say there is a 'Type mismatch error'. Typing `name$="Armadillo"`, `fred=314`, `fred=3.14` or `fred%=314` is fine, but try `name$=314` or `fred%=3.14` and you'll get the error message. For beginners it's probably best to forget the integer/other-number distinction and just store all your numbers under ordinary variable names with no % sign – it avoids lots of potential pitfalls.

Another problem with mixing types comes if you use INPUT commands. If you have a program line reading `INPUT fred`, BASIC expects you to type a number (because there is no $ sign after the variable name 'fred'). If you type 'Hello', ie. some text instead of the number it expects, BASIC will say '?Redo from start?'. This means that what you have typed is wrong in some way, probably a string where BASIC expected a number or an unexpected comma in a string, so just type a proper input and carry on.

More about PRINT statements

The PRINT statement is one of the most useful commands that BASIC has – without it, you couldn't ever see any results!

The general format of the PRINT statement is `PRINT item1;item2;item3...` You can put several different items on the same PRINT line, but they should be separated by semi-colons. Each item can be either a string in double-quotes or a variable name of any kind. PRINT will look up the value of the variable in question and print that on the screen. So if two variables x and y were 2 and 3 respectively,

```
PRINT x;"plus";y;"is";x+y
```

would print out on the screen '2 plus 3 is 5'. (BASIC leaves

spaces around the numbers for you.)

Normally, at the end of every PRINT statement BASIC will move the cursor to the beginning of the next line. If the last thing on a PRINT statement is a semi-colon, BASIC will leave the cursor where it is on the screen and will carry on printing there at the next PRINT command. So, the program

```
10 PRINT "The answer is ";
20 PRINT x+y
```

would give as output 'The answer is 5', whereas leaving the semi-colon out of line 10 would make the '5' appear on the next line down.

Incidentally, if you want to print things to the printer rather than the screen, you use the command LPRINT instead of PRINT, which works in exactly the same way:

```
10 PRINT "This will be on the screen"
20 LPRINT "And this on the printer"
```

PRINT also has a simple way for you to arrange your output in columns. BASIC thinks of the screen as being split into columns 15 characters wide: if you type into BASIC `PRINT 1,2,3,4,5` you will see the numbers 1 to 5 spread over a line at 15 character intervals. In other words, a comma means 'print at the next column start'.

Finally, there is an extension to the simple PRINT command called PRINT USING. This is quite complicated, but does have one very useful application which you can easily memorise: supposing that the variable 'fred' held 1.5, then `PRINT fred` would output 1.5, but

```
PRINT USING "###.##";fred
```

would generate 1.50 on the screen (with two leading blanks). For every # in the PRINT USING string BASIC always prints one character, either a space (before the decimal point) or a zero (after the point). This is very useful when printing the results of money calculations, since you can be sure to always get two decimal places in the pence.

Do it again

The true power of programming is in being able to do repetitive things over and over again. BASIC has a command called a 'FOR loop' which will repeat instructions in a loop. To illustrate the power of the variables, INPUT, PRINT and looping, Listing 2 shows a short program to print out multiplication tables. What the program will do is ask for a number, and then print a table of '1 times 7 is 7, 2 times 7 is 14, 3 times 7 is 21' and so on.

```
10 WIDTH 80: ZONE 20
20 INPUT "What times-table would you
like";table
30 PRINT
40 PRINT "The";table;"times table"
50 FOR i=1 TO 20
60 PRINT i;"x";table;"=";i*table,
70 NEXT i
```

▲ Listing 2: calculating multiplication tables

For the time being, forget line 10. Line 20 is an INPUT command, which you should understand by now. When you type in and run this program, it first pauses to ask you which times-table you want to print out. Type, for instance, 7 if you want the 7 times table, and press [RETURN].

Line 30 then prints a blank line on the screen. This is an ordinary PRINT statement, but because there are no strings or variables to print it just leaves the line blank. Line 40 prints out a heading saying "The 7 times table" (assuming you typed 7 at the input).

Lines 50 to 70 are the interesting parts. Line 50 sets up a new variable called, 'i', and tells BASIC that you want to run all the lines between the FOR and the NEXT statement once for each value of i indicated. In this case there is only one line to be done, so Line 60 is run first with i=1, then with i=2, then with i=3 and so on until i=20. Once the loop has been run for all values of i, the program ends, since there is nothing else to do after the NEXT statement.

Line 60 in fact does all the hard work. Whatever the current value of i is (1 to 20), it prints out the relevant multiple of 7 in the form '2 x 7 = 14'. As explained in the earlier section on the PRINT command, the comma at the end of the line means, "Don't go on to the next line, but move to the next formatting column on the screen".

Now to explain Line 10. The PCW screen is 90 characters wide, and normally when you are using the comma method of PRINTing things in columns BASIC uses columns 15 characters wide. For this times-table 15 characters isn't enough – try running the program without line 10 and you will see that the screen formatting gets messed up as one column overlaps the next.

WIDTH 80 sets the width of the display area of the screen to be 80 columns wide rather than the normal 90, and ZONE 20 sets the column widths to be 20 characters wide each. This way there are exactly four columns across the screen so when BASIC gets to the end of one line the next column starts exactly underneath the one on the line above. Try a few different values of WIDTH and ZONE and see what happens.

Quick PRINT

Because it is so commonly used, BASIC has an abbreviation for the keyword PRINT, which is a question mark. Type in a program line like `10 ?"Hello"` and when you LIST it out again you will see it now reads 10 PRINT "Hello".

Strings and things

Here is a quick summary of the most useful commands that you can do with strings. They are all shown as they would be used in a PRINT statement, but equally you could assign the result to a string variable (a variable with a $ at the end of the name), eg. `x$=UPPER$(y$)`. The way to learn how the commands all work is of course to experiment with a few different inputs and see what happens:

+ – concatenates two strings: `PRINT "Hel"+"lo"` produces "Hello".

LEFT$ – takes the leftmost characters off a string: `PRINT LEFT$("Hello",4)` produces "Hell".

RIGHT$ – takes the rightmost characters off a string: `PRINT RIGHT$("Hello",4)` produces "ello".

MID$ – takes characters from the middle of a string: `PRINT MID$("Hello",2,3)` produces "ell". It has taken out the three characters starting at character number 2. MID$("Hello",2,1) would give the single character "e".

UPPER$ – converts the string to upper case characters: `PRINT UPPER$("Hello")` produces "HELLO". When you've read a string from a user by an INPUT command (see the main text) it is useful to forcibly convert it to either upper or lower case so when you look at it you needn't worry whether or not Shift Lock was on as it was typed.

LOWER$ – converts the string to lower case characters: `PRINT LOWER$("Hello")` produces "hello".

STRING$ – creates a long string by repeating a specified character: `PRINT STRING$(5,"*")` produces "*****".

```
run
What times-table would you like? 7

The 7 times table
 1 x 7 =  7          2 x 7 = 14          3 x 7 = 21          4 x 7 = 28
 5 x 7 = 35          6 x 7 = 42          7 x 7 = 49          8 x 7 = 56
 9 x 7 = 63          10 x 7 = 70         11 x 7 = 77         12 x 7 = 84
 13 x 7 = 91         14 x 7 = 98         15 x 7 = 105        16 x 7 = 112
 17 x 7 = 119        18 x 7 = 126        19 x 7 = 133        20 x 7 = 140
Ok
```

▲ How the 7 times table appears on the screen after typing in Listing 2

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PD TOOLKIT

Free software? What's the catch? Adrian Wilkins looks at some essential tools available through the public domain

Just as taking the cylinder head off the family Escort engine is a daunting task to the amateur without a few basic tools like a socket wrench, so also is some PD material if you don't have the right equipment in your tool box. This month we introduce some "PD Spanners" for the beginner.

NSWP

NSWP (stands for New SWeeP, an enhanced version of an earlier offering) is a utility used to print or transfer files between discs, or to "squash" or "unsquash" library files. It actually combines all the operations of CP/M's normal commands DIR, DIRSYS, TYPE, SHOW, ERA, RENAME, PIP and much more into one tiny program, and thus becomes a highly useful utility to any CP/M user, irrespective of its role as a PD can-opener. On entry it reads, sorts into alphabetical order and displays the disc directory, and lists each file one at a time – asking you what you wish to do with it. One of the options is 'tagging' so you can later perform a mass copy or delete.

For those readers unfamiliar with the concept of squashed or squeezed files, this is a common trick used by software libraries to compress onto one disc more files than would normally fit. The saving thus obtained is normally around 30%, but it can be dramatically higher than this – NSWP's own .DOC file is 30K of normal text for instance, but it 'squashes down' to only 18K. Think of the saving in discs if you make regular backups! NSWP uses the weird convention of replacing the middle character of the filename extension by the letter 'Q' for squeezed files, thus a .DOC file becomes .DQC , a help file .HLP squashes to .HQP, a .WS (wordstar) file will end .WQ , and of course .COM files are squashed .COM runnable program files. For ASCII (printable) files, NSWP is sensible enough to unsqueeze any .xQx files as it goes if you select the V (view) or P (print) commands.

NULU

No, it's not a new convenience on Paddington station! This is another basic tool for packing up program libraries. If you have thirty files of 1k on a disc – say BASIC listings – you're wasting, on average, half a k per file on an 8256 A-disc, or 1k per file on a B-disc. That's 15 or 30k in all!. This is because the discs work in storage blocks of 1k or 2k respectively, so on average half the final block is unused. NULU can run files together to be stored as a single file – another PD library gimmick – and, more to the point, unpack them again when you want to get at the contents. An essential companion for PD users.

EXPRESS

One aspect of all CP/M computers that has infuriated its programmer users since the year dot has been the absence of a really friendly text editor. Of course, with the Amstrad PCW, those preferring to program in Mallard BASIC have a built-in editor, but if you use Pascal, C, Fortran or Assembler then what are the options? There's ED (supplied with the machine) which is hardly friendly, and then there's RPED which is slow and only handles small files... or there's EXPRESS. It has been described as *the* programmers' editor.

The version of EXPRESS on the disc supplied by the PDSL is a specially-configured model for the PCW, and its author sensibly used similar key-stroke combinations to LocoScript for cursoring around the text, advancing words or lines, etc. This was more or less successful, although there are one or two quirks (try inserting a [RETURN] half way through a line of text), but as with any singing-and-dancing editor there can be no substitute for practice. EXIT

Where to go

All the PD software mentioned here is available from PDSL, Winscombe House, Beacon Road, Crowborough, Sussex, TN6 1UL – tel 08926 63298. NSWP is distributed on the 3-disc library catalogues (1 disc for 8512/9512 users); NULU is supplied automatically on PD volumes that require it; and EXPRESS is on CPM8BUK volume 45.

▲ NSWEEP in action

Don't read this!

Even if you were about to turn over this page, maybe this box heading caught your eye. And, as they say, now we've got your attention...

Of the hundreds of thousands of PCW users out there, only a tiny fraction seem to have realised the potential in Public Domain. Why is PD being ignored?

Possibly a proportion of 8000-Plus readers only ever use LocoScript, whereas all PD software revolves around CP/M. Perhaps, too, would-be users are persuaded by the ads into buying commercial packages, safe and snug in the knowledge that there is a printed manual and a support "hotline". (My personal experience suggests that getting through to Directory Enquiries is easier than many hotlines)!

In fact, it's true to say that many PD programs are actually more thoughtfully written, better documented, and more reliable than some proprietary packages – even if you do have to print out the manual yourself. And the fact that it only costs from £3 per disc just has to appeal to the poor (or tight-fisted). So it isn't only for cranks and PhD students.

LISTINGS

Make friends and influence people by deluging them with junk mail – it's all in this month's collection of BASIC listings.

Mail Merge

by Jon White

Owners of the PCW 9512 have a mail-merger program bundled with their machine, but to be able to do all those wonderful bulk mailshots so beloved of book clubs and loan sharks 8000 series owners have to pay out an extra £30 for LocoMail.

This program will do the job for you. It will take a standard form letter that you have written in LocoScript (or any word processor/text editor) and print out 'personalised' mailshots. You have to give the program a file of names and addresses, which it then inserts in the slots you marked in your form letter.

Set date for use in letters
Open address file
Look for line with list of codes
Put codes in an array
Tell printer to print in Elite
Open letter file
Find the value of the codes in an address line
Print ten blank lines on screen
Close letter file if completed
Look for codes in letter file
Print a line of the letter
Tie up codes with address file with codes from letter file
Replace the code with the correct value
Feed in a line of the address list
Feed in a line of the letter
Close address file and finish

```
10 DIM var$(20),adbit$(20)                                                  077A
20 INPUT "Type in today's date";adbit$(0):var$(0)="&dat"                    1270
30 INPUT "What is the name of your address list file"; ad$                  173C
40 PRINT "Which disc is the file on (A, B or M)";:INPUT drive$              17A6
50 OPEN "i",1,drive$+":"+ad$                                               0788
60 GOSUB 390                                                               0423
70 IF LEFT$(ad$,1)<>"&" THEN 60                                            0859
80 FOR i = 1 TO LEN(ad$)                                                   0784
90 IF MID$(ad$,i,1)="&" THEN ns=ns+1:var$(ns)=MID$(ad$,i,4)                1183
100 NEXT i                                                                 0353
110 INPUT "What is the name of your letter file";let$                       1472
120 INPUT "Which disc is the file on (A, B or M)";drive$:let$=drive$+":"+let$ 1A00
130 INPUT "Send output to screen or printer (S or P)";pr$:pr$=UPPER$(pr$)   1094
140 IF pr$="P"THEN LPRINT CHR$(27)+"M";                                    0C46
150 WHILE NOT EOF(1)                                                       0700
160 OPEN "i",2,let$                                                        04C0
170 GOSUB 390                                                              0406
180 FOR i = 1 TO ns                                                        060C
190 t=INSTR(st,ad$,","):IF t=0 THEN t=LEN(ad$)+1                           0FEA
200 adbit$(i)=MID$(ad$,st,t-st):st=t+1                                     0C47
210 NEXT i                                                                 0356
220 GOSUB 250                                                              03EF
230 IF pr$="S"THEN PRINT STRING$(10,CHR$(10))                              0FD7
240 WEND:GOTO 450                                                          065A
250 IF EOF(2)THEN CLOSE #2: RETURN                                         0CBE
260 GOSUB 430                                                              03F5
270 i=1                                                                    0211
280 WHILE i<LEN(line$)                                                     084E
290 IF MID$(line$,i,1)="&"THEN GOSUB 330                                   0CD7
300 i=i+1:WEND                                                             05D7
310 IF pr$="P" THEN LPRINT line$ ELSE PRINT line$                          11DC
320 GOTO 250                                                               039C
330 FOR t=0 TO ns                                                          05D2
340 IF var$(t)=MID$(line$,i,4)THEN 370                                     0B0D
350 NEXT t                                                                 036A
360 RETURN                                                                 03BF
370 line$=LEFT$(line$,i-1)+adbit$(t)+MID$(line$,i+4)                       110C
380 RETURN                                                                 03C3
390 IF EOF(1) THEN 450                                                     0610
400 LINE INPUT #1,ad$:st=1                                                 08C8
410 IF LEFT$(ad$,4)="&&&&"THEN 450                                         0913
420 RETURN                                                                 0398
430 LINE INPUT #2,line$                                                    0876
440 RETURN                                                                 038C
450 PRINT"End of address list reached ":CLOSE:END                          1310
```

```
&ttl &ini &snm
&str
&twn
&cou
&cod

&dat

Dear &ttl &snm

You have been chosen form all the people in &str to represent your
neighbourhood in the area finals of 'Keep &cou Clean' competition.
I wish you, &ttl &snm, every success.

Yours cincerely



Napoleon Bonaparte
'Keep Elba Clean' committee
```

▲ a typical form letter

```
Address file for LETTER.P1 page image file.
&ttl, &ini, &snm, &str, &twn, &cou, &cod
Dr.,H.,Dimstatement,23 Array Row,Watford,Herts,WD3 4RT
Miss,Selena,Scott,TV AM,Teddington Lock,London,L34 5TY
Capt.,Robert Falcon,Scott,"Chez Oates",Antartica,North Pole,NP1
&&&&
```

▲ the address file to go with the form letter

```
Ok
run
Type in today's date? 1st March 1988
What is the name of your address list file? adlist
Which disc is the file on (A, B or M)? a
What is the name of your letter file? letter
Which disc is the file on (A, B or M)? a
Send output to screen or printer (S or P)? _
```

▲ running the mail merger

You write the letter as normal except that where you want a name to appear, or any other item which will change from person to person, you type a special code. A look at the sample letter will give you the idea. In this example `&ttl` stands for the person's title (Sir, Mr., Ms., Hey You, etc) and `&snm` is for the surname.

In this letter the variables used were `&ttl` – title, `&ini` – initials, `&snm` – surname, `&str` – street name and number, `&twn` – town name, `&cou` – county and `&cod` – postcode. The codes are totally arbitrary, you just have to make sure when you create the letter and address files that you are consistent in using the same names in the two. They always begin with an &, and must have exactly three letters following.

A special code, `&dat`, is always available for you to use as the current date (which you are asked to set each time you run the program).

So, type out your form letter in LocoScript. Now you need to create an ASCII file ([f7] in Loco 1, [f1] in Loco 2). You *must* store the final ASCII file in the leftmost group of the LocoScript disc (this is the only group CP/M can read) and choose 'Page Image' file from the ASCII file menu, not 'Simple text'.

Then make out the list of addresses and personal details for the mailshot run. This file can start with any text you like as a memory jogger for you of what's in it – you can forget what abbreviations like '&zob' mean after a while. The sample address list shown, for use with the example form letter, uses the first line as a reminder of the order that the '&'-codes will come in.

The next line is the crucial one. You need to list the code names in the order the corresponding information will appear, separated with a comma. Then using exactly one line per person, list the names, addresses and other details of the people you want to send the letter to, with the information in the same order as the line of codes. Again, separate each piece of information with a comma. If you want any punctuation, say after the title (Dr. for instance) you just type it normally, before the comma.

The last line of the address file should be just `&&&&` by itself. Save this as an ASCII file, again in the leftmost group of your LocoScript disc, but this time it must be a 'Simple Text' not 'Page Image' file.

Start CP/M, run BASIC and load the program. Put your disc with the letter files you just prepared into the drive, and type `RUN` to run the mailmerge program. It will ask you for the date.

You are then asked for the name of the address file (eg. ADDR.LST) and what disc drive it is on (eg. A), and similarly for the file with the actual letter in it and its drive. Finally you are asked whether you want results to go to the screen or the printer. It's as well to press S for screen the first time through to check it's going OK, or you waste a lot of paper.

Then all you should need to do is feed paper into the machine until all your letters are printed. Printing is always in 12 pitch, but unfortunately all LocoScript bold, italic, pitch etc. codes are lost in the process of making ASCII files. You can switch between draft and high quality using the printer control line (press [PTR] and when the line appears at the bottom of the screen move the cursor over where it says 'Draft Quality' and then press [+]).

The merging process will run a good deal faster if you copy (with PIP) your letter and address files across to the M drive before running the BASIC program.

```
Capt. Robert Falcon Scott
"Chez Oates"
Antartica
North Pole
NP1

1st March 1988

Dear Capt. Scott

You have been chosen form all the people in "Chez Oates" to represent your
neighbourhood in the area finals of 'Keep North Pole Clean' competition.  I
wish you, Capt. Scott, every success.

Yours sincerely



Napoleon Bonaparte
'Keep Elba Clean' committee
```

▲ a mailshot printout

Slide Game

by A King

▲ Rearrange these letters to make a well known phrase or saying

As if you didn't spend enough time on your PCW as it is, here's the chance to while away an infinite number of hours with this simple but addictive game. It's a version of the classic sliding-square children's puzzle. You are given a series of letters in random order on sliding panels in a rectangular frame, and of course there is only one space. All you have to do is shuffle the letters into the right order.

The advantage with this computer version of the game is that you can vary the size of your rectangle up to 10 squares by 6 squares. It starts by filling up the tiles randomly with capital letters and when it runs out of them it starts on the lower case alphabet. After that it even goes on to use other vague symbols like '{'s and '/'s. Set yourself the challenge of which order you are going to arrange the tiles in – alphabetical, reverse alphabetic, making a word, whatever you like; you're only playing against yourself.

```
10 DIM a(10,6),c(60):e$=CHR$(27):DEF FNat$(x%,y%,a$)=e$+"Y"+CHR$(32+y%)+CHR$(32+x%)+a$   160
20 PRINT e$;"E";e$;"H":INPUT "Seed :";a%:INPUT "Size :";lx%,ly%:RANDOMIZE a%             19FF
30 GOSUB 130:GOSUB 170                                                                   0788
40 PRINT FNat$(xe%*6+25,ye%*4+2,e$+"p"+" "+e$+"q")                                       0886
50 a$=INKEY$:IF a$="" THEN 50:ELSE a%=ASC(a$):c%=0:xm%=0:ym%=0                           126F
60 IF a%=31 AND yp%>1 THEN ym%=-1                                                        0A26
70 IF a%=30 AND yp%<ly% THEN ym%=1                                                       0B1E
80 IF a%=1 AND xp%>1 THEN xm%=-1                                                         0A2D
90 IF a%=6 AND xp%<lx% THEN xm%=1                                                        0E26
100 IF a%=32 THEN GOSUB 210                                                              06A6
110 GOSUB 260:PRINT FNat$(xp%*6+25,yp%*4+2,a$):xp%=xp%+xm%:yp%=yp%+ym%                   188E
120 GOSUB 260:PRINT FNat$(xp%*6+25,yp%*4+2,e$+"p"+a$+e$+"q"):GOTO 50                     1688
130 FOR j%=1 TO lx%*ly%                                                                  07F8
140 r%=INT(RND*(lx%*ly%)-1)+1:IF c(r%) THEN 140                                          0E35
150 rx%=INT(RND*lx%)+1:ry%=INT(RND*ly%)+1:IF a(rx%,ry%)>0 THEN 150                       1498
160 a(rx%,ry%)=r%:c(r%)=1:NEXT:RETURN                                                    0D5D
170 FOR x%=1 TO lx%:FOR y%=1 TO ly%:dx%=25+x%*6:dy%=2+y%*4                               147E
180 IF a(x%,y%)=0 THEN xe%=x%:xp%=x%:ye%=y%:yp%=y%:GOTO 200                              145A
190 PRINT FNat$(dx%,dy%,CHR$(a(x%,y%)+64))                                               005E
200 NEXT:NEXT:RETURN                                                                     0975
210 a%=a(xp%,yp%):IF a%=0 THEN PRINT CHR$(7):RETURN                                      11F2
220 IF SQR((xp%-xe%)↑2+(yp%-ye%)↑2)>1 THEN PRINT CHR$(7):RETURN                          16B9
230 PRINT FNat$(xp%*6+25,yp%*4+2," "):SWAP xe%,xp%:SWAP ye%,yp%                          12EC
240 PRINT FNat$(xp%*6+25,yp%*4+2,e$+"p"+CHR$(a%+64)+e$+"q"):a(xp%,yp%)=a%:a(xe%,ye%)=0   1441
250 RETURN                                                                               039C
260 a%=a(xp%,yp%):IF a%=0 THEN a$=" " ELSE a$=CHR$(a%+64)                                104E
270 RETURN                                                                               03D0
```

Good programs needed!

We are looking for well written programs of any length up to 50 or so lines which we can print in the 8000 Plus listings pages each month. Of course, since we want short listings as well as long, the longer ones will have to be *really* special!

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5. A signed statement confirming that the program is your own work and hasn't been submitted to anybody else.

Send your listings to *Listings, 8000 Plus, 4 Queen Street, Bath BA1 1EJ*. Please allow up to 40 days for return of your disc – the listings are assessed in a batch once a month.

The only problem in typing the listing is line 220 – the two ↑ symbols are up-arrows, which you get with [EXTRA]+U. Once running it is simple to use; the program asks you first for a 'seed'. This is an integer (a whole number from 1 to 32767) which BASIC's RANDOMIZE command takes and uses to make sure you get a properly random pattern. It will then ask you for the size you want the frame to be. You just type in two numbers separated by a comma. The first number can be up to 10 and the second up to 6.

After a short pause for thought the PCW prints out the letters. Using the cursor keys, you move the cursor to one of the letters adjoining the space, press the space bar and the letter moves into the space

When you have met your self-appointed challenge of getting the tiles into the order you want, (or you want to give up!) you simply press [STOP] to get out of the program. Be warned – unless you start with a simple two by two frame you could be in for some sleepless nights.

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GSX is the graphics operating system supplied with Amstrad PCWs. Prospero's well established graphics library, Prospect, is now available for the Amstrad 8-bit range. It provides a simple way to produce complex graphics using GSX for only £29.95.

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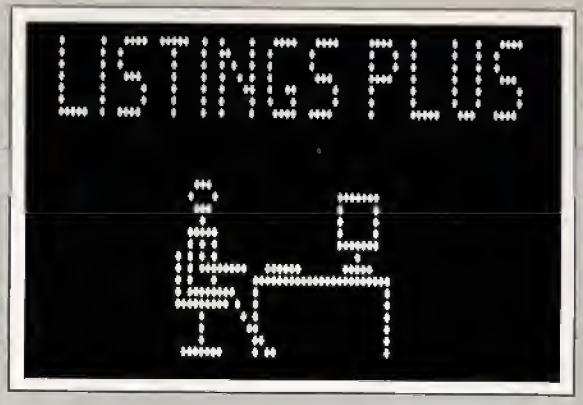
Access

Drawing package

by Roy Archer



Although full-blown graphics packages for the PCW are difficult things to write, this little listing is a lot of fun. The program is sheer simplicity.

Type it in and run it. If you want to start a new picture from scratch, press N at the first question (the other option is to load a picture you previously saved). Now you simply build up a picture by placing ◆s (filled diamonds) where you want them on the screen. You move the cursor around the screen using the normal cursor keys. If you want to draw (in other words if you want a ◆ placed in a specific place) you press [PASTE] with the cursor in the square you want. Every square you move the cursor to from now on will be filled with a ◆ until you press the space bar. If you press [CUT] you go into erase mode, where every square the cursor moves over becomes a space again.

When you have finished your drawing you press 'F' for finish and your drawing is saved as a disc file under any name you choose – up to 8 characters. The program adds the file extension .DWG to the file name and when you want to recall a drawing it shows you a directory of all the suitable files. Don't type the .DWG part when saving or loading files.

And then the fun really starts. When the program saves your drawing it doesn't just save the final pattern, but instead it saves the sequence of keystrokes you used to move around the screen creating it. So when you choose R for 'Recall a file from disc' the PCW starts in the same point and faithfully follows your route around the screen filling and erasing as it goes. Only it moves a lot quicker than you do.

This means that not only can you load a finished drawing, but with a little imagination you can also produce impressive changing and moving graphics. With a slight modification you could use these files to produce imaginative display features, building up words and graphics and changing them. Hours of fun.

The only way to get a printed copy of your works of art is to take a 'screen dump' by pressing [EXTRA]+[PTR], and this isn't available to 9512 owners.

```
10 e$=CHR$(27):cls$=e$+"E"+e$+"H":DEF FNp$(x,y)=e$+"Y"+CHR$(32+x)+CHR$(32+y):x=15:y=45          1914
20 PRINT cls$;e$"0"                                                                            0620
30 PRINT:INPUT "New Drawing or Recall from Disc (N/R) ";a$:a$=UPPER$(a$):PRINT                 2109
40 IF a$="N" THEN 90 ELSE IF a$="R" THEN PRINT "DRAWING DIRECTORY - ";                         1806
50 IF FIND$("*.DWG")<>"" THEN FILES "*.DWG" ELSE PRINT "None":GOTO 30                          1453
60 PRINT:PRINT:INPUT "Type file name (omit '.DWG') ";F$:F$=F$+".DWG":PRINT cls$;e$"f"          1F59
70 OPEN "I",1,F$:INPUT #1,E:FOR I=1 TO E:INPUT #1,x,y,d:PRINT FNp$(x,y)CHR$(d);:NEXT           212E
80 GOSUB 260:GOSUB 250                                                                         07BF
90 OPEN "O",2,"M:TEMP.DWG":E=0:PRINT cls$                                                      0E13
100 PRINT FNp$(30,15)"[PASTE] to Draw; [SPACEBAR] for Space; [CUT] to Erase OR F to Finish"    232C
110 GOSUB 170                                                                                  03F0
120 i$=UPPER$(INKEY$):IF i$=CHR$(32) THEN d=0 ELSE IF i$=CHR$(70) THEN 200                     14E1
130 IF i$=CHR$(23) THEN d=188:GOSUB 170 ELSE IF i$=CHR$(21) THEN d=32:GOSUB 170                1907
140 IF i$=CHR$(31) THEN x=x-1:GOSUB 170 ELSE IF i$=CHR$(30) THEN x=x+1:GOSUB 170               197A
150 IF i$=CHR$(1) THEN y=y-1:GOSUB 170 ELSE IF i$=CHR$(6) THEN y=y+1:GOSUB 170                 1954
160 GOTO 120                                                                                   039B
170 PRINT FNp$(x,y)CHR$(d):IF d=32 OR d=188 THEN GOSUB 190                                     1414
180 PRINT FNp$(30,0)"Row"x"Col"y:PRINT FNp$(x,y);: RETURN                                      13E9
190 PRINT #2,x","y","d",";:E=E+1:RETURN                                                        0C8A
200 CLOSE 2:PRINT FNp$(30,0);e$"f";e$"K":GOSUB 260                                             0FD7
210 PRINT FNp$(30,0);e$"e";:INPUT"Save this Drawing (Y/N) ";a$:a$=UPPER$(a$)                   1AD7
220 IF a$="N" THEN 250 ELSE PRINT FNp$(30,0)e$;"K";:INPUT"New Filename ";F$:F$=F$+".DWG"       1BB1
230 PRINT FNp$(30,0);"Please wait a moment";e$;"K":OPEN "I",2,"M:TEMP.DWG":OPEN "O",1,F$       1C02
240 PRINT #1,E:FOR P=1 TO E:INPUT #2,x,y,d:PRINT #1,x","y","d",";:NEXT:CLOSE 2                 1BE6
250 CLOSE 1:PRINT e$"l";e$"e";cls$:END                                                         0B8F
260 WHILE INKEY$="":WEND:RETURN                                                                0D53
```

How to type in a listing

Load up Mallard BASIC – at CP/M's A> prompt, put the CP/M master disc in and type BASIC [RETURN].

Now you see the 'Ok' prompt. Just type in the lines of the listing exactly as they are printed on the page, including the line number at the start, but *not* the check number at the extreme right. They are for use with the 8000 Plus listing checker program, as printed in issues 10 and 14. Type LIST at any time to print your typing so far out to the screen.

Mistakes made before you press [RETURN] can be corrected with the [DEL] keys, otherwise you will have to use the 'line editor'. Suppose you have made a typing error in line 100: type EDIT 100 and then you can use the cursor keys and [DEL] keys to correct it. Press [RETURN] when the line is alright. To delete a line, type just its line number and [RETURN].

When you've finished, save the program to a disc by the command SAVE "FRED" (choose your own appropriate file name instead ot FRED). To run the program, type RUN.

Programs rarely run first time, but when BASIC encounters a mistake it tells you roughly what line the error is on. Use the EDIT command to correct it.

You can rerun the program another day by loading BASIC up and, with the disc you saved the program on in the drive, typing LOAD "FRED" then RUN.

Gremlin's Corner

We always know when we print an incorrect listing in 8000 Plus because the office phones light up the day after publication with anxious readers seeking advice. Miraculously, recent months have been remarkably error-free, but unfortunately there was a mistake in last month's Maze program.

You need to edit the program so that all occurrences of GOSUB 320 are changed to GOSUB 315. This occurs once in line 120, and three times in 190. Changing these four references will get rid of the annoying 'Improper Argument in line 280' error message which crops up after a few minutes of otherwise normal play.

Variable Lister

by Geoff Buckeridge

Now all you BASIC programmers have no excuse for not being really organised. Of course it's a good idea to take a careful note of all those variables in a program and what they all do but somehow life always seems too short to do it. Now this program does virtually everything for you. It simply goes through any listing you want, extracts the names of all the variables, and then presents them in a couple of helpful layouts.

It is really invaluable for those times when you have to stop halfway through a program or when you have a program that you want to develop further. Just save your program in ASCII form (type `save "filename",a`) and then run this listing. Enter the name of the program to be worked on when asked, and it immediately sets to work picking out all the variables it can find and printing them on screen.

It then allows you to either view on screen or print out the information in a couple of different forms. Style one sorts the variables into alphabetical order, lists the number of times the variable is used and the line numbers it is used in.

Style two lists each variable with the number of the first line it is used in, the number of times it is used and a space to allow you to write in a brief description of what the variable does.

One point of interest is the POKE in line 330 which takes everything that would normally be shown on screen and prints out a hard copy. Line 520 puts everything back in order.

```
10 var$="":DIM var$(50),no%(50),ln$(50),fl$(50)    0C41
20 INPUT "What file",file$    0988
30 OPEN "I",1,file$ + ".bas"    06B3
40 LINE INPUT #1,hdr$:i%=INSTR(hdr$," "):hdr$=RIGHT$(hdr$,LEN(hdr$)-i%)    1806
50 WHILE NOT EOF(1)    0700
60 LINE INPUT #1,a$:j%=INSTR(a$," "):line$=LEFT$(a$,j%-1)    1085
70 FOR i%=j% TO LEN(a$):c$=MID$(a$,i%,1)    0BC6
80 IF i%<=LEN(a$)-3 THEN rm$=MID$(a$,i%,3) ELSE rm$=""    106F
90 IF c$="'" OR rm$="REM" THEN lit%=1:GOTO 170    0F0F
100 IF rm$="DAT" THEN lit%=1:GOTO 170    0CCA
110 IF ASC(c$)=34 THEN lit%=ABS(lit%-1):GOTO 130    0FA3
120 IF (var%=0 AND c$="$") OR (var%=0 AND c$="(") THEN 170    004A
130 IF lit%=0 AND ((c$)="a" AND c$<="z")OR c$="%" OR c$="$") THEN var$=var$+c$:var%=1:GOTO 170    1A9C
140 IF var%=1 AND c$>="0" AND c$<="9" THEN var$=var$+c$:GOTO 170    120F
150 IF var%=1 AND c$="(" THEN var$=var$+c$    0C36
160 IF var%=1 THEN GOSUB 530:var$="":var%=0    0FAA
170 NEXT    0337
180 IF var%=1 THEN GOSUB 530:var$="":var%=0    0FAE
190 line$="":lit%=0    05C1
200 WEND: CLOSE    0695
210 PRINT:PRINT:PRINT"SORTING"    0E7E
220 xchg%=-1:pass%=1:    0752
230 WHILE pass%<=vcnt%-1 AND xchg%=-1    0028
240 xchg%=0    0362
250 FOR j%=1 TO vcnt%-pass%    096F
260 IF var$(j%)<=var$(j%+1) THEN 290    0988
270 xchg%=-1:SWAP var$(j%),var$(j%+1):SWAP no%(j%),no%(j%+1)    11F8
280 SWAP ln$(j%),ln$(j%+1):SWAP fl$(j%),fl$(j%+1)    0E31
290 NEXT    033C
300 pass%=pass%+1    06B8
310 WEND    0315
320 PRINT:INPUT "Printer (Y/N) ",a$:PRINT:a$=UPPER$(a$)    1438
330 IF a$="Y" THEN POKE 18527,90 ELSE POKE 18527,100    0F57
340 INPUT "Style 1 (Y/N) ",a$:a$=UPPER$(a$):IF a$<>"Y" THEN 460    138E
350 PRINT hdr$:PRINT    0775
360 PRINT "VARIABLE";TAB(12) "No of Ref's";TAB(26) "LINE NUMBERS":PRINT    1968
370 FOR i%= 1 TO vcnt%    0747
380 PRINT TAB(3) var$(i%);TAB(15) no%(i%);    08F0
390 a$=ln$(i%)    0309
400 a%=LEN(a$):b%=INT(a%/55)    07C1
410 IF b%=0 THEN PRINT TAB(26) a$:GOTO 450    0083
420 c%=INSTR(50,a$,","):IF c%=0 THEN c%=a%+1    08A5
430 PRINT TAB(26) LEFT$(a$,c%-1):a$=RIGHT$(a$,a%-c%)    0F06
440 GOTO 400    0399
450 NEXT    0336
460 PRINT:INPUT "Style 2 (Y/N) ",a$:PRINT:a$=UPPER$(a$):IF a$<>"Y" THEN 520    19E9
470 PRINT hdr$:PRINT    077A
480 PRINT"VARIABLE","1st LINE","TIMES USED","DESCRIPTION":PRINT    1638
490 FOR i%= 1 TO vcnt%    074C
500 PRINT TAB(3)var$(i%),fl$(i%),no%(i%),STRING$(35,95)    1024
510 NEXT    032F
520 POKE 18527,100:END    0770
530 FOR j%=0 TO vcnt%    073E
540 IF var$=var$(j%) THEN no%(j%)=no%(j%)+1:ln$(j%)=ln$(j%)+","+line$:GOTO 580    1703
550 NEXT:vcnt%=vcnt%+1:var$(vcnt%)=var$:no%(vcnt%)=1:ln$(vcnt%)=line$:fl$(vcnt%)=line$    1EC4
560 IF POS(0)>80 THEN PRINT    0924
570 PRINT var$,    0557
580 j%=vcnt%+1:RETURN    078E
```

VARIABLE	No of Ref's	LINE NUMBERS
a$	26	60,60,60,70
		390,400,410
a%	4	400,400,420
b%	2	400,410
c$	15	70,90,110,1
		150,150
c%	5	420,420,420
file$	2	20,30
fl$(	5	10,280,280,
hdr$	7	40,40,40,40
i%	14	40,40,70,70
j%	21	60,60,70,25
		530,540,540
line$	5	60,190,540,
lit%	6	90,100,110,
ln$(	7	10,280,280,
no%(	8	10,270,270,
pass%	5	220,230,250
rm$	4	80,80,90,10
var$	12	10,130,130,
var$(	9	10,260,260,
var%	9	120,120,130
vcnt%	12	230,250,370
xchg%	4	220,230,240

VARIABLE	1st LINE	TIMES USED	DESCRIPTIO
a$	60	26	________
a%	400	4	________
b%	400	2	________
c$	70	15	________
c%	420	5	________
file$	20	2	________
fl$(	10	5	________
hdr$	40	7	________
i%	40	14	________
j%	60	21	________
line$	60	5	________
lit%	90	6	________
ln$(	10	7	________
no%(	10	8	________
pass%	220	5	________
rm$	80	4	________
var$	10	12	________
var$(	10	9	________
var%	120	9	________
vcnt%	230	12	________
xchg%	220	4	________

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TIP-OFFS

A few tips you don't have to declare on your tax returns

Bogged down by the paperwork again? Cut a swathe through brain-taxing manuals with TipOffs – advice which is cheaper than your solicitor's, and more interesting than your accountant's! If you've found a way to fiddle a bit extra out of LocoScript, tease the truth out of the Mini Office manual or any other well-known program, tell all – the most useful ones could win you £30! (If you declare it, that's a bit less after tax at 27%). This month's recipient is Fenman Steve Lowe whose LocoMail calculator will be a boon to all you tax avoiders out there...

LocoMail calculator

The 9512 handbook mentions the possibility of making a calculate facility using LocoMail but doesn't elaborate. Here's a possibility – this will work for all users of LocoMail, LocoScript 1 and 2, PCW 8000 and 9512 owners alike. It gives you the the ability to add, subtract, multiply or divide numbers, decimal numbers as well as integers.

The following should be typed into a LocoScript document with a layout which contains just one tab setting – a 'decimal' tab about 15 spaces from the left hand margin. Save the document with codes and symbols not showing (the 'f8=Options' menu). When you create the file, call it TEMPLATE.STD and put it in a spare group on your start of day disc – that way it'll always be available in drive M since LocoScript copies all TEMPLATE.STDs to M when it starts up.

The text in typewriter-style (`like this`) is to be typed verbatim, the rest is instructions, like to press [RETURN]. The (+Mail) and (-Mail) codes are obtained by pressing [+]M and [-]M respectively. (The text between (+Mail) and (-Mail) will show up in reverse video.) The only difficult characters to type are the |, which is marked on the 9512 keyboard but is [EXTRA]+§ in Loco 2 and [EXTRA] +. in Loco 1, The divide sign is [EXTRA]-Z in LocoScript 2, though it won't affect the program if you type in something else.

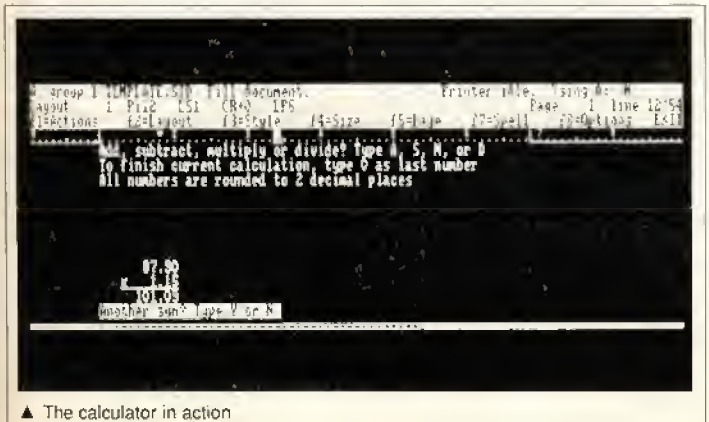
Once typed in, whenever you want to do a quick calculation in LocoScript, go to the Disc Manager Screen, move the cursor onto the calculator TEMPLATE.STD file, press F for Fill, and follow the on screen prompts to do your calculation. First you are asked whether you want to Add, Subtract, Multiply or Divide – type A, S, M or D. Then you are asked to type the two numbers, it works out the result, and asks you for the next number. Either type zero to end, or if you enter another number it will add (or multiply etc.) it onto the previous result

All responses to questions you type should be followed by [ENTER] to make LocoMail continue. At the end of the fill when you've finished whatever you were calculating, either choose LocoMail's 'Abandon' option, or save the results of the fill in a document. This means that all your results are stored on disc and you can cut and paste them into other documents.

As it stands, the calculator is set to print results out to two decimal places – you can set it up for any number up to 9 though, by swopping all occurrences of "|2" in the above for "|9" or however many places you require.

Although your pocket calculator may be quicker, the advantages of the LocoMail calculator are that a running display of calculations is shown on screen and can be directly stored in a LocoScript document. Also, the batteries don't wear out!

Steven Lowe
Huntingdon, Cambridge



▲ The calculator in action

```
Add, subtract, multiply or divide? Type A, S, M, or D
To finish current calculation, type 0 as last number
All numbers are rounded to 2 decimal places
(+Mail)Number1=0:Number=0:Repeat="**":KR="**"[RETURN]


SUM=" [RETURN]
(+Mail) # Number1=0:<:Input=?#;First Number(-Mail)(+Mail)
:>:#Number1=0:<(-Mail)[TAB](+Mail)[input|/2](-Mail)[RETURN]
(+Mail)>(-Mail)(+Mail)[RETURN]
#Number1=0:<:Number1=[Number1+Input]:>[RETURN]
#Q="A":<:Sign="+":>#Q="S":<:Sign="-":>
#Q="M":<:Sign="x":><:Sign="+":>[RETURN]
Number=?#;Next number? (-Mail)(+Mail) #number> 0
: <(-Mail)[TAB](+UL)(+Mail)Sign(-Mail)[3 spaces]
(+Mail)[Number|/2](-Mail)(-UL)(+Mail)[RETURN]
#Q="A":<:Number1=[Number1+Number|2]:>
#Q="S":<:Number1=[Number1-Number|2]:>
#Q="M":<:Number1=[Number1*Number|2]:>
#Q="D":<:Number1=[Number1/Number|2]:>(-Mail)[RETURN]
[TAB](+Mail)[Number1|/2](-Mail)(+Mail)(-Mail)"(-Mail)[RETURN]


(+Mail)Calculate=" [RETURN]
(+Mail)Q=?; Type A S M or D [RETURN]
#Number1>0:<:KR=?;Keep result of previous sum as starting
figure? Y or N(-Mail)(+Mail):>(-Mail)[RETURN]
(+Mail)# Number1=0:<:KR="N":>:#KR="N":<:Number1=0:>#
KR="Y":<(-Mail)[TAB](+Mail)[Number1|/2]
(-Mail)(+Mail)>(-Mail)(+Mail)[RETURN]
#Q="A" or Q="S" or Q="M" or Q="D":<:
%sum@number(-Mail)(+Mail):>[RETURN]
Another=?;Another sum? Type Y or N[RETURN]
#another<>"Y":<:repeat="":[RETURN]
>(-Mail)"[RETURN]
(-Mail)(+Mail)@repeat % calculate(-Mail)
```

Address to where

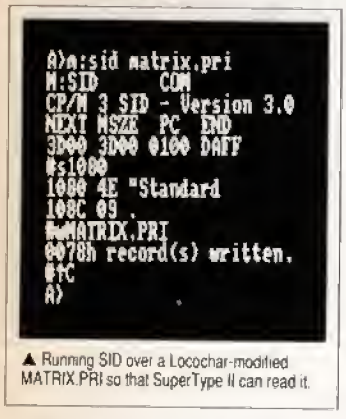
A quick way to print your LocoScript letters recipients' address is to copy it into a phrase, do an 'End Page Here' command (press [ALT]+[RETURN]) to start a new page, then paste the address to the page, setting the left hand margin to, say, 30 to centre it.

Having printed the letter proper LocoScript will request a new sheet of paper to print the last page, ie. the address. Insert the envelope, press [EXIT] as usual and there's your envelope addressed for you.

As ever with 8000 series printers, you may have to manually help the envelope through the printer by gently pulling to help the paper feeding action, otherwise thicker envelopes may slew and smudge.

Liz Gower
Worthing, West Sussex

Sneaky SuperType



▲ Running SID over a Locochar-modified MATRIX.PRI so that SuperType II can read it.

Two tips for SuperType II owners:

1. 15 and 17 pitch text when using a LocoScript modified by SuperType come out as normal, and you can get interesting variety in your documents by mixing a SuperType font and the normal font.

2. (The hard one!) Owners of version 2.12 of LocoScript will probably have put some redefined characters on their MATRIX.PRI file. Unfortunately SuperType's installation process won't work with a Locochar-modified MATRIX.PRI file, only the original, so you can't create a SuperType font which also incorporates your own characters – *unless* you are crafty and use SID.COM as follows.

First, use Locochar in the usual way to define the new characters, keeping the name MATRIX.PRI for the new file and leaving the set/style/I/D options given – the character set reads 'Non-standard'. Design your characters and exit from Locochar as normal. Transfer the new MATRIX.PRI file to your LocoScript work disc as per the instruction book, and keep a copy on a separate disc.

Now copy the CP/M file SID.COM to drive M by inserting side 2 of your systems discs and enter `PIP` [RETURN]. At the asterisk insert side 4 of your discs and type `M:=A:SID.COM`[RETURN]. Press [RETURN] again to get back to the A> prompt, insert the disc with the *copy* of your MATRIX.PRI file (not your Loco start disc) and type `M:SID A:MATRIX.PRI`[RETURN].

At the # prompt, type `s1080` [RETURN] and then very carefully type exactly as follows (use the cursor keys to move back and edit the line if necessary) `"Standard,` followed by exactly four spaces, followed by [RETURN]. Now type a full stop followed by [RETURN] and then type `wA:MATRIX.PRI`[RETURN].

Press [STOP] to get back to CP/M, and go through the SuperType font installing procedures as per the manual, but instead of using your LocoScript work disc when asked, insert the disc you just used SID.COM with. You can't use your redefined MATRIX.PRI on your Loco start disc – it just won't work – but you can use it as a basis for your SuperType fonts. When the fonts are installed, you can transfer them to your Loco work disc. Each font will now have your own personally designed characters incorporated.

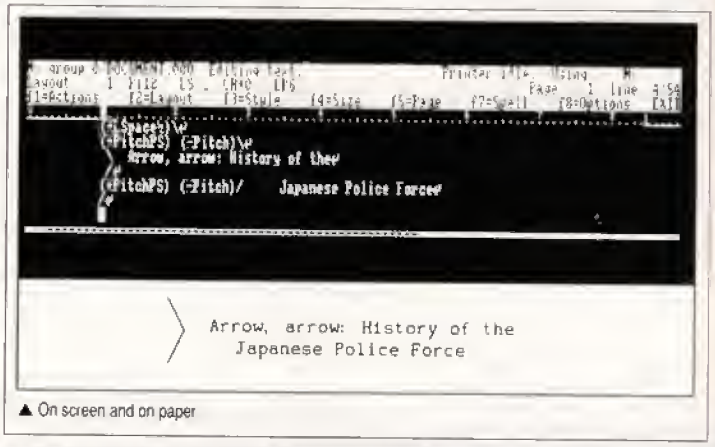
David Gillham
Livingston, West Lothian

Sloping off

It is possible to draw continuous sloping lines in LocoScript 2.12 using just one custom-designed character from the LOCOCHAR program – a totally blank character whose proportional width is set to 50%!

This gives, using pitch 12 and the codes (+PitchPS)[newly-defined blank character](-Pitch), a half-width space. It then becomes quite easy to draw continuous sloping lines using forward (/) or reverse (\) slashes. In Pitch 12 and Line Space ½ type \ on each of three consecutive lines, with a half space before the middle one and a full space before the third one. Each character is then displaced half a space to the right from the other and the result is a continuous smooth line. A similar procedure works with / characters where each is displaced half a space to the left from the one above.

Dr E Keith Lloyd
University of Southampton



▲ On screen and on paper

Unerase update

Here's a BASIC listing which will be invaluable for those emergencies when you erase a file by mistake. If you are unsure about typing in BASIC listings, follow the 'How to type in a listing' box on page 64. Place a disc which contains PIP.COM, say your CP/M work disc, in the drive – this will be your 'emergency unerase' disc. Then run the program – a file will be created on the disc called LIMBO.COM. (Check it's there by typing `DIR`[RETURN]).

```
10 OPEN "O",1,"LIMBO.COM"
20 FOR N=1 TO 15
30 READ X$
40 PRINT
#1,CHR$(VAL("&H"+X$));
50 NEXT
60 CLOSE 1
70 DATA
3E,E5,32,E0,FB,32,B0,FB,32,5
C,FB,32,28,FA,C9
```

You use this LIMBO routine as follows. After erasing your file THESIS.DOC by mistake, don't attempt to write any more files to that disc until after the unerase process. Insert your emergency unerase disc and type:

```
A>PIP M:=PIP.COM
A>ERA M:PIP.COM
A>LIMBO
```

(put your disc with the accidentally erased file on in the A drive now)

```
F9A>M:PIP
THESIS.DOC[G0]=THESIS.DOC
F9A>USER 0
```

Now on you should see THESIS.DOC alive and kicking, and you can edit it as normal.

Philip Barrett
Cambridge

If you're stuck away on a desert island, who are you going to ask when your PCW does the unexpected? Make sure you take this 8000 Plus emergency first aid kit with you:

1. My disc runneth over

That dreaded LocoScript moment: while editing or trying to save you get a 'disc full' message and are returned to the disc manager. What you have to do is move some files ([f3] in Loco 2, [f4] in Loco 1) from your current disc to the M drive to clear some space on your disc for the file being edited. When there's enough, you can get back to editing the document by pressing [EXIT]. You often need more space than you think – to edit a 10k document for example, you need another 10k free for LocoScript to work with. The prevention, as ever, is to split long documents – anything over 10k – into smaller ones.

2. Paper jams

If your paper jams while printing a LocoScript document, don't switch off! Press [PTR]; this puts you into 'printer control state' and pauses the printer.

LocoScript 2:
Press 'f7=Document'. You have a variety of options, the one you probably want being 'reprint from current page' (though you can abandon printing altogether if you want). Select that one, reload with paper, and press [EXIT] to resume printing.

LocoScript 1:
Press 'f5=Document'. Your options will be to reprint from the current

Grow your own archives

PIP's archive function lets you keep backups easily. Suppose you are working on the chapters of a book, CHAPTER.1 to CHAPTER.20. The command `PIP M:=CHAPTER.*[A]` will copy all files which have been altered since the last usage of PIP with [A]. First, ensure your data disc has the CP/M files SUBMIT.COM and PIP.COM on it. Now create (using RPED or LocoScript and its 'Make ASCII file (Simple text)' option) a text file on the same disc called ARCHIVE.SUB with these lines:

```
PIP M:=CHAPTER.*[A]
PIP B:=M:CHAPTER.*
ERA M:CHAPTER.*
```

When you've finished a work session, run CP/M, insert your data disc, and type `SUBMIT ARCHIVE` [RETURN]. When prompted for the disc for B:, insert your backup disc.

This procedure is designed for 8256 and 9512s, because when PIP tries to copy the files to the disc in 'drive B', CP/M will pause to ask you to insert the correct disc. 8512 owners should make sure that their data disc is write-protected; then CP/M will pause with a 'Retry, Ignore, Cancel' message when it tries to copy the files onto the (same) disc, letting you put in the backup (write-enabled) disc and press R for Retry to carry on. The first time you do this, all your CHAPTER files will be copied, but thereafter, only those you've edited since the last archiving will be copied. It's the easiest way to keep backups.

Maurice Williams
Nuneaton, Warwickshire

Diminishing RETURNS

In a BASIC 'Do you want to quit? (y/n)' situation, with a line such as `INPUT ANS$`, you can avoid pressing [RETURN] by using `ANS$=INPUT$(1)` which limits the input string to one character (or any other number if you like). The input isn't shown on screen, so could be used to keep passwords secret!

Kathleen Axe Birmingham

ADVENTURE CORNER

For all you games fans: adventure games ace 'The Elf' from the Tolkienesque town of Abingdon gives you stage-by-stage hints to take you through the *Hitch Hiker's Guide to the Galaxy*...

To stop bulldozer: Lie in front of it and ignore Ford when he enters.

When in darkness: Read the screen carefully for the one sense that returns to you after a while; eventually something will work.

How to obtain the babel fish: Hang gown on hook, cover drain with towel, block panel with satchel, place junk mail on satchel and press the button.

Open case and get plotter: Pull lever and listen to message, then after listening to poetry enter the word via the keyboard.

To avoid missiles: Connect the improbability drive, plotter, etc to Eddie the ship's computer and turn on.

Getting past the bugblatter beast: Place towel on your head and use the stone to put name on the memorial.

At the party: Make sure you get the fluff from Arthur's jacket and place into the handbag.

Back on earth: Buy the sandwich in the pub and give it to Arthur who will give it to the dog.

On Vogon warship and in brain: Get the awl and then just wait. When in the brain remove the particle.

At the dais: Tell the guards to drop their rifles and then shoot the rifles. Enter the heart of Gold during the confusion.

Where is the fluff: Satchel fluff in satchel, jacket fluff on Arthur's jacket at party, pocket fluff in pocket of gown and seat fluff under the speedboat seat.

Inside the whale: Place flowerpot into thing and wait. When back on Heart of Gold go into the sauna.

How to open the intelligent door: Prove you are intelligent by showing it the tea and also the no-tea.

DESERT ISLAND TIPOFFS

page ('this page') or the start. Set the option required with the [+] key, reload paper, and press [EXIT] to resume printing. If you want to abandon printing altogether, you want the [f7] option 'Reset'.

3. Nasty disc errors?

When you try to read or write to a disc, do you get a funny error message with some nonsense about address marks? Possible causes are:

– you're trying to use a double-density disc (a B drive disc on 8512s or a normal disc on the 9512) in a single-density drive (an A drive disc on the 8256/512);
– you've put a double-density disc in the wrong way round in a 9512 or in the B drive on an 8512;
– your disc is faulty.

In the last case, a few retries (pressing R from the "Retry, Ignore or Cancel" message) sometimes does the trick – specks of dust can be persuaded to move away. Failing that, try 'I' for ignore and hope for the best. If it does work, copy the files off that disc as soon as you can onto a new one.

If you get no joy from any of the above, your disc is probably corrupted. If you fancy a go at recovering the data yourself, you try 'The Knife' or one of the other disc repair programs; or you could try one of the kindly souls who advertise their recovery services in the Small Ads of the PCW magazines. Boring though it is, the best plan is to keep daily backups (copies of your work discs).

4. Broken DISCKITs?

A disc which has been copied with DISCKIT in two parts can, if the wrong disc was inserted at the wrong time, get corrupted. DISCKIT lays down a mark on the disc during the first part of the copy saying 'this disc is being copied', and if the second part is never completed, neither CP/M nor LocoScript will be able to use the disc because the 'boot sector', which holds all the information about what is on the disc and where, has this mark on it. The solution is to use the disc copy command from 'The Knife Plus'. This requires no specialist skill, and the program will automatically replace the damaged section with one from a good disc for you, after which all the data on the copied disc will be intact.

5. Capital trouble?

Is everything you type appearing in capitals? Three possible explanations. You might have inadvertently selected SHIFT LOCK (get out of this just by hitting the [SHIFT LOCK] key again); or you could be in CAPS LOCK or NUM LOCK. To get in and out of 'Caps Lock' mode, which makes letters upper case and leaves numbers as normal, press [ALT]+[ENTER].

'Numeric Lock' is similar but makes the keys on the right of the keyboard (the numeric keypad) return their numbers and not the cursor functions etc. To leave (or enter) this mode press [ALT]+[RELAY].

6. 'File not found' with PIP

Two explanations for this PIP error message when you try to copy a file (assuming the file really is there!). It could be a 'system file' (or a 'hidden file' in LocoScript); the remedy is just to press [COPY] (to recall the command you just typed) and add `[R]` at the end – this tells PIP that the file to copy might be a system file.

If that still doesn't work the other main possibility is that the file to copy is not in user group 0. (This is often the case if you're copying a LocoScript file). The easiest thing to do is to go back to LocoScript to do your copying, but if you're happy in CP/M you can try the following. Suppose you're copying a file SENSIBLE.DOC from group 5 of the A drive to group 0 of the M drive. First, type `USER 5`, then `PIP M:[G0]=A:SENSIBLE.DOC`. Finally type `USER 0` to get you back to group 0.

7. 'DISK WRITE NO DATA BLOCK' in PIP

This is computerspeak for 'no space left on destination disc'. You're trying to copy files onto a disc which is full, or has just been filled up. The solution is obviously to get rid of some of the files on the disc (either by erasing them or copying them off to a new disc) to make space for those you're trying to copy onto it.

8. Faulty self-starting discs

If on starting an auto-booting disc with a PROFILE.SUB it gives 'Error in line 0003' the reason is simple. The startup disc contains 173k of files, so is full. PROFILE.SUB needs 1k of disc workspace to itself, and if there's no space to do that you'll get this message. The remedy is simply to clear space for this – just 1k will do – by erasing something.

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These pages provide a comprehensive guide to the Amstrad PCW software. Published in three monthly parts, this time it's the turn of Databases, Education, Communications and Programming packages to face the ultimate test. We've set out to cover every important piece of software we could lay our hands on, and to give you enough information to decide whether they are suitable for you.

The software listed here represents what we consider to be the best of the many programs available. As well as a brief summary of what they do, the main Plus and Minus points for each program are listed – Pluses have a ☐ by them, and Minuses a ■. Those we think are particularly noteworthy have an corner flash on them.

To the best of our knowledge, all the programs here should run on both 8000 series machines and the 9512.

DATABASES

There are broadly two different types of database, and which suits you best depends, of course, on what you want it for.

Firstly there's the simple card index substitute. For many home users, this will be the kind of thing you want – all it does is store your address book or stock items so that you can easily look them up.

A more sophisticated option is the programmable database. With these, in addition to allowing simple card index retrieval there is a command language which allows you to analyse the data on the cards. For example, you could automatically add up the money owed to you by all your customers from Yorkshire. To make best use of this kind of facility, you will need to be able to understand a little programming, although it's not too hard really.

A bit of jargon now. A database is said to consist of records – this is just like a card in a conventional card file, with all someone's details on it. Each record is composed of fields – a field is a single entry on a card, like someone's name, or age, or postcode.

The thing that makes a database special is an index. You might be able to hold your address book as a simple list in a word processor document, but if it gets large then this becomes unwieldy. An index means that the database has worked out which order records should be in, so it can go straight to the one you want without looking at lots of others first.

The field that you use as your index (e.g. someone's surname) is said to be a key field, and can be looked up very fast compared to "non-key" fields. A good database will allow multiple keys, meaning that it can look up data just as fast for a variety of types of information.

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Database Manager (AtLast) — Good value

£29.95 • Rational Solutions • 01-874 412441

About to be released in a new version with a new manual and a new price – meanwhile, At Last 1 is a full-featured database that is excellent value for money. It does what Cardbox did, with much better reporting facilities, and can sort too. You can do simple totalling of columns, but not general arithmetic on fields in a record. Its claims to be a true 'relational' database like dBase II are a little grandiose, but a good general purpose database – recommended.

PLUSES • MINUSES

- ☐ The basic form layouts are generated automatically
- ☐ The data can be indexed on more than one item
- ☐ Good screen editing facilities
- ☐ Printed reports can include totals
- ☐ Subsets of records can be selected using sophisticated rules
- ■ Manual sometimes lapses into computerese
- ■ Page dimensions have to be specified every time you want to list things, even to the screen
- ■ Can't do general arithmetic within fields

Mini Office Professional — Incredible!

£29.95 • Database Software • 0625 878888

Mini Office is a suite of five integrated programs – database, word processor, spreadsheet, graphics module and comms package. The database is a pretty standard card index type, similar to First Base. Good range of selection operations and arithmetic on fields. Can sort over a combination of fields and print out a variety of smart layouts, and you can have up to 255 fields! Easy to use and would be well worth the money even by itself – and of course you're getting four other very good programs as well.

PLUSES • MINUSES

- ☐ Easy to use and intuitive
- ☐ Can use the data in the word processor
- ☐ Powerful selection and sort facilities
- ☐ Arithmetic on fields
- ☐ "Test print" facility lets you check your labels will print OK
- ☐ Can make global changes, ie. change '£3.50' to '£5' in all records with one command
- ■ Can't import or export data
- ■ Manual is of very little use

Cambase

£49.95 • Camsoft • 0766 831878

Cambase is very strong on data security – you can define passwords to protect sensitive databases. It is driven by quite an intricate set of menus, and you'll have to plan your application carefully since the database format can't be changed once set up. Generally good for writing applications with.

PLUSES • MINUSES

- ☐ Sensitive data can be protected by a password system.
- ☐ Record structure can be conditional – e.g. "only have a 'spouse' field if status is 'married'"
- ☐ "Processes" provide for some simple automatic calculations
- ■ Over-protective user interface, which asks for confirmation of almost every command
- ■ Database main attributes are fixed after initialisation and can't be changed.

- Doesn't have full screen editing of records
- Manual needs an index, and is weak on explaining advanced topics
- The (single) key field has to be entered separately to the record data proper

Delta
Powerful

£99.99 • Compsoft • 04868 25925

Delta is another of the heavyweights, like dBase II and Condor, but unlike them is fully menu driven. Although the screen layouts are fully flexible, there is a default "quick" layout so you don't have to sweat at defining your own. It could use better record indexing facilities. Particularly good for writing applications, once you have ploughed through the large manual.

PLUSES • MINUSES

- Records can contain up to 90 fields, plus groups of fields that may be repeated
- Screen layout can be user defined, or "quick" mode used
- Single-page letter writer provides detailed mail-merge
- Processes can be defined, and run from user defined menus, for ease of use by others
- Very full, and quite readable, manual
- Only one field may be used for indexing
- Very big program – a PCW8256 would be hard pushed
- Some of the menu operations are unforgiving to errors

Pocket InfoStar
£69.50 • MicroPro/DRA • 0386 841181

Consists of two large programs, DataStar and ReportStar (both available independently). DataStar is a conventional database, with screen card layout and indexing. ReportStar then generates the printed output, either from DataStar or CalcStar files. Powerful if you can use them, but the suite is horrifically overcomplicated, and the documentation just incomprehensible.

PLUSES • MINUSES

- DataStar is a quite good database with indexing and calculated fields.
- "Transaction processing" feature allows cross-referencing of data files.
- Can be integrated with other Pocket products, eg WordStar.
- Can take up to 255 fields per record
- Two-volume manual set is very badly organised.
- There are separate programs to run for form design, data entry and reporting.
- Operation is all by obscure command keys, à la WordStar.

Cardbox-Plus
£99.95 • Business Simulations • 0892 863105

Business Simulations are the company who actually wrote the successful Cardbox database, and they are the sole distributors of their enhanced version Cardbox-Plus. Disappointingly, still no field totalling facilities, but it does boast sorting, index listing, disc management and an autosave feature as extras to Cardbox. The ultimate straight card index, if you have the money.

PLUSES • MINUSES

- All the facilities of the very successful Cardbox
- Cards can be sorted into order for browsing and printing
- "Autosave" will regularly store the data to disc in case of mishap
- Files created by Cardbox can be read
- Full and good manual, although the tutorial is at the end
- Still no way of performing numeric calculations
- A lot to pay for a few frills to the basic Cardbox

Chibase
£49.95 • Chiasma • 06333 60996

A 'free format' database, which means you don't have to go through the usual rigmarole of defining your record format before you can enter your data. Instead, you just type text into Chibase, mark the words to be indexed, and it can then treat that file as a database.

PLUSES • MINUSES

- Doesn't require you to set up a preset 'record' card
- Searches through your data very quickly
- Allows you to select up to 50 keys for each page of text
- Allows editing of text without a word processor
- No sample file for you to learn on

dBase II
Raw but powerful

£99.00 • Ashton Tate/First Software • 07357 5244

The WordStar of database packages. Recently licensed "cheaply" for Amstrad machines, dBase II is a market leader in business computing. As you would expect, this means it is very powerful but very complex. It has a procedure language to allow you to write programs to manipulate the data, and you can construct index files for really fast access to large databases. If you can make the effort to learn it, it'll serve you well.

PLUSES • MINUSES

- Powerful command language for customised programs
- Indexing facility makes large databases fast to handle
- Can handle very big databases
- The data can be fairly easily altered after its entry
- Manual is daunting (but there are plenty of independent books on the market)
- Can't easily alter the screen record layout
- For an expensive package, you still only get 32 fields per record
- Generally unfriendly unless you have some programming skills

FT=DB
Simple & effective

£29.95 • Encyclasoft • 0270 811868

A free form database like Chibase, but instead of typing your text into the database itself, you create it on a wordprocessor first of all. Once done and edited to your liking, you mark all the word you want to be used as keywords (still in your wordprocessor) and then read it into FT=DB. Now you can treat it as a database, compile indexes, search for phrases and so on, all quite efficiently.

PLUSES • MINUSES

- Easy to use
- Versatile retrieval system over several text files
- Inexpensive
- Can move between index and text at will
- No editing facilities within FT=DB

First Base
Beginners' best buy

£29.95 • Minerva • 0392 37756

Billed as a simple database for the first time user, First Base is quite a competent cheap card index. The manual is computer printed, and weak on diagrams which doesn't help things. One weakness is getting printed results out of First Base – either you settle for crude lists, or you have to create a template in LocoScript which is awkward to do. But overall, for simple applications and beginners, it's pretty good value for money.

PLUSES • MINUSES

- Can alter the index field at any time
- Simple to use screen editing make data entry easy
- Good value as a simple card index lookup system
- Can easily browse through the database picking out a set by hand
- Manual is badly laid out and generally difficult
- Producing printed output is awkward

Sagesoft Retrieve
£70 • Sagesoft • 091-284 7077

A high-power package that is relatively easy to use with password security if desired, calculations, automatic counting or deletion of sets of records satisfying given conditions, sophisticated sort and select commands, and the ability to change the structure of an existing database. All this is done by a set of commands rather like a programming language. Printed formats are rather limited though and the program insists on using both drives, making use on a 8256 impractical.

PLUSES • MINUSES

- Easy to use for a powerful package
- Advanced sorting and selection commands
- Subsets can be written to files
- Can count or delete subsets with one command
- Labelling/mailmerging routines included
- Can change structure of existing database
- Impossibly big program for 8256
- Printed output limited – must use mailmerge

Smartcard
£59.95 • Focus Computers • 0272 420109

A conventional card index database which is now the nearest thing available to Cardbox. Small and fast, you can sort the records index up to three fields and do simple arithmetic in fields. Can't put background text (eg. titles) on records or printouts.

PLUSES • MINUSES

- Good clear screens
- Plenty of onscreen help
- Fast and high capacity
- Easy to use
- Can't put background text on printed reports
- No way of exporting data for mailmerge

Magic Filer
£69.95 • Sagesoft • 091 284 7077

Magic Filer is not a true database, but is a structured filing system. Information is split into a hierarchy of categories, and tagged with a keyword which is not stored as part of the data. You can browse through the data, but it will get tedious if you find it needs updating regularly. Many applications will find Magic Filer restrictive.

PLUSES • MINUSES

- Good for browsing through data when you don't really know what's there
- Data can be declared "read only" to protect it from alteration by other browsers
- The basic filing system is weird but not wonderful
- Editing data once in Magic Filer is awkward
- The documentation is far too brief
- You can only have one database per disc

Microfile (Sold in The Micro Collection)
£49.95 • Saxon Computing • 0401 50697

Microfile is a well implemented simple database, driven by plenty of menus and on-screen prompts. It's fast and has good screen control, although it has some size restrictions. Microfile comes as part of a software suite,"The Micro Collection", which is good value (Microfile, Microwrite, MicroSpread, Flexilabel and Lock-It)

PLUSES • MINUSES

- The price includes competent word processing, spreadsheet, labelling and encryption programs
- Plenty of menus and on-screen prompting
- Very flexible formatting for screen layout and printing
- Numeric fields can be expressions to be calculated
- Indexing is fast and can be on several fields
- Maximum number of fields per record is only 20
- Limited facilities for totalling up fields in a database

File Manager
£99.95 • Sandpiper Software • 0978 355333

A database with the power to handle full relational applications. Unfortunately the manual is so badly written that the power is hard to get to. For the money, there are better systems around.

PLUSES • MINUSES

- Potentially a powerful and flexible system
- 'RAPID' generator can produce simple files quickly
- Appalling manual
- Poorly customised for PCW use
- The full system is very complex to use

Homeview
£195.44 • Cavalier/Load & Run • 0322 72116

A specialist database for the Estate Agenting business. Costs a lot, but then all you estate agents should be able to afford it from your outrageous commission fees (yes, the 8000 Plus staff are all about to move house). You specify required area, no. of bedrooms etc, and get a list of suitable vendors or buyers. Works well.

PLUSES • MINUSES

- Once set up, simple enough for non-computerate staff
- Makes up mailshots from LocoScript
- Can adjust property categories to suit
- Impresses your customers!
- There will always be clients whose requirements don't fit your system
- Very expensive

Announcing the PCW9512 Rescue Kit

You've rushed out and bought one of the new Amstrad PCW9512 computers, and some old software for the PCW8256 which you expected to work, but it doesn't, the computer just beeps when you try to load the software. What do you do?

Reach for the PCW9512 Rescue Kit, it can convert most PCW8256/8512 only discs into PCW9512 only discs.

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Reach for the PCW9512 Rescue Kit, it can copy files onto the 40 track discs used by these older computers.

You've run out of discs and need somewhere to store a file, but it seems silly to rush out and buy new discs when you have several commercial discs which only use one side – there's even a label on the other side saying "format this side for your own files". What can you do?

Reach for the PCW9512 Rescue Kit, it can format just one side of a disc with 40 or 80 tracks and so free up the spaces for your use.

If you've got a PCW9512 then you're likely to need the PCW9512 Rescue Kit, available by mail order for just £9.95 including p&p from:

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EDUCATIONAL

Iankey Crash Course — *Best basic course*

£24.95 • Iansyst • 01-607 0187

A fairly traditional typing tutor, taking you through basic keyboard exercises. There's a lot of explanatory text, which gets in the way second time around. Definitely competent, but a bit boring.

PLUSES • MINUSES

- Mostly avoids boring letter drills
- Very full on-screen information guides you along
- "Fast" option cuts out some text if it gets repetitive
- Not particularly imaginative use of graphics
- It doesn't always ensure that the cursor is properly aligned with the exercise text

2 Fingers Touch Typing — *Tappers best*

£24.95 • Iansyst • 01-607 0187

Despite its provocative name, a useful typing tutor in that it specifically caters for people who can already get by on keyboards with two fingers. You are gradually introduced to touch typing, so your speed doesn't drop while you learn. Fills a necessary slot in the Typing Tutor market.

PLUSES • MINUSES

- Suitable for improving two-finger typists without much drop in speed
- Full on-screen instructions
- Exercise material is interesting text, not letter drills
- Explanation text is annoyingly verbose in some lessons
- It doesn't always ensure that the cursor is properly aligned with the exercise text

Giantkiller

£14.95 • Topologika • 0733 244682

A mathematics adventure game loosely based on Jack and the Beanstalk. Lots of intriguing puzzles which should stimulate any student up to GCSE standard. Not the best adventure game ever written but great for making mathematics fun!

PLUSES • MINUSES

- Puzzles plausibly integrated into scenario
- Progression of game is simple and well defined
- Puzzles introduce a lot of valid mathematics
- Program understands only very simple commands
- Saving a position takes a move – can be fatal
- Won't be of particular help in exams

Animal Vegetable Mineral • WorldWise

£14.95 each • Bourne Educational • 0794 523301

Aimed at the younger market, 7-15 year olds. Both these programs work by learning as the child uses them. Think of an object and the computer tries to guess it. If it is wrong, the child is asked for a question which would allow the PCW to be right next time, and it learns.

PLUSES • MINUSES

- Can be used as many times as the child's imagination holds out
- Performance can be analysed by a teacher after a session
- As you build up a base of objects and questions, they can be saved for reuse
- It needs a lot of typing, hence a lot of supervision
- The PCW starts with only two objects known , so it takes time to get going
- Documentation has hardly been altered from cassette-based versions
- Since it is for young children, more imaginative use of the screen would be nice

Better Spelling

£12.95 • School Software Ltd • 010 353 61 27994

This is a spelling course aimed at the 8 to adult age group. It consists of a series of well organised, short lessons each dealing with one topic, like plurals or which version of there/their/they're to use in a sentence. The use of the PCW screen is rather unimaginative, and doesn't hold your attention.

PLUSES • MINUSES

- Well thought out lessons to emphasise particular points
- Teaches words in a sentence context as well as in isolation
- Lessons can be picked in any order from a menu
- Seems to be proof against mischievous key pressing
- Boring use of the screen doesn't grab interest
- No instructions come as to how to use the program.

Chemistry • Biology

£12.95 • School Software • 010 353 61 27994

These two are fairly traditional question-and-answer tests. You are faced with a choice of 10 topics, and then asked 10 or so questions each, where you have to fill in the blank in a statement. There are preamble notes beforehand, and if you get it wrong you are given a clue. Aimed at 12-16 year olds.

PLUSES • MINUSES

- Questions would challenge a GCSE pupil well
- Preamble notes introduce topics
- The fill-in-the blank questioning style has little flexibility for different answers
- No option to add questions for a specialised syllabus
- Some careless errors, like incorrect facts and hard to decipher chemical formulae

Micro Maths — *Well designed*

£24.95 • LCL • 0491 579345

Supposedly covering 8 to adult ages, this seems an O-level type program, covering topics from calculus to tables. A good implementation on the PCW with proper use of the screen. Questions are picked at random from a pool, so may repeat but never run out. Replies to questions are typed in mathematical notation, like X^2+3

PLUSES • MINUSES

- You can pause to use BASIC as a calculator while you think
- 'Unlimited' question set
- Comes with a 'free' book of AEB O-level questions
- Good hints and explanations when you get an answer wrong
- Questions in a topic repeat occasionally
- Some frills, like the clock and beeper, are annoying
- No flexibility to add questions for a particular syllabus

Amstat 1,2,3 and 4

£30-ish • Coleman • Ashby-de-la-Zouch LE6 5DA

A suite of four statistical routines including a business analysis program, forecasting and resource management. Individual prices range from £27.95 to £39.95, all four cost £99.95. Sophisticated but perhaps awkward for beginners.

PLUSES • MINUSES

- Good range of statistical functions
- Good manual
- Can produce fair quality graphical results
- Some editing procedures very long-winded
- Needs some expertise to use properly
- Weak on checking that input data is reasonable.

Oxstat

£113.85 • Medstat Ltd • 0602 411120

This is a specialised statistical analysis package for the PCW. Functions from calculations of means to multiple linear regression are covered, and it can do some rudimentary graphics for results. You can read data from spreadsheets or external devices.

PLUSES • MINUSES

- Comprehensive range of statistical functions implemented
- Good screen editing facilities for entry of data
- The speed seems acceptable, even though it is written in BASIC
- Even complex analyses are easily entered by simple menus
- Weak on graphical presentation of results

Yes Chancellor! — *Different*

£14.95 • Topologika • 0733 244682

Wait! Don't skip over Yes Chancellor! because it calls itself an 'economic simulation' program. Instructive and fun to use, you type in your annual budgets (tax rates, public spending etc.) and see your popularity plunge and the economy crash. Great for economics classes, also an amusing game in itself.

PLUSES • MINUSES

- Simple but effective model of the economy
- Comes with booklet explaining economic principles
- Great for teaching economic and political pragmatism!
- Can get boring as a game
- You can't adjust the model of the economy, so it can be too simple

COMMUNICATIONS

Communications is one of the glittering areas of computing, gurus would have you believe. It can provide a fascinating hobby for 'hackers', but more importantly it is a valuable business tool.

'Electronic mail' is just what it says: you use your PCW to send messages, which can be documents thousands of words long, to others on the electronic mail system. The best known system of this kind is Telecom Gold, which also allows you to send telexes. Another major system is Prestel, which is more of an information provider – you can read share prices, weather information and other news direct from your phone line.

For any professional service, you pay a registration fee, plus a connection charge – typically around 10p per minute you use the system. Of course, your phone bills are extra. For hobbyists there are also 'Bulletin boards', which are effectively a kind of private electronic mail system run by a system operator (a 'sysop' to those in the know).

To use any service, you will need to buy a modem and an interface. A modem allows you to send computer signals down a phone line, and the interface gets the signals from your PCW to your modem. The pair will set you back £200 or more. Once done, you need some software to allow you to send and receive data, and it is this software reviewed below.

Electronic mail services just send strings of characters to and fro, whereas Prestel is a 'Viewdata' system, meaning it sends pictures and graphics too. Software needs to do more to receive Viewdata graphics, so if you want to use Prestel make sure your software is up to it.

8256UKM7.COM — *Public domain*

Public domain (ie. free!)

P.D. software documentation is often poor but this program has an above average document file. UKM7 was written to support ASCII file transfers using error correction and as a dumb terminal either for use over the phone or between two Amstrads. Between two PCW's file transfer is possible at a staggering 31,250 baud which is even faster than PIP! Easy to use for beginners and better than KERMIT, UKM7 provides a cheap and excellent way to communications after you've got fed up with the PCW's MAIL232. 8256UKM7 is available from the Public Domain Special Interest Group, or most bulletin boards supporting the PCW machines.

PLUSES • MINUSES

- Cheap! (the price of a phone call)
- Easy to use, and helpful menus
- Both CRC and Xmodem protocols supported
- Single file and Batch Mode transfers
- "Quiet" mode for slightly faster transfers (on-line transfer progress report disabled)
- Only ASCII, no Viewdata
- You need to find a PD software source (eg. use a modem and MAIL232 software)

THE GOOD SOFTWARE FILE

COMMUNICATIONS • PROGRAMMING

Mini Office Professional
£29.95 • Database Software • 0625 878888

Mini Office is a suite of five integrated programs: database, word processor, spreadsheet, graphics module – and a comms package which is as comprehensive as anything else on the market. It can display both ordinary text screens and the 'Viewdata' block graphics used by Prestel. You are offered baud rates from 75 to 9600, separately set for transmit and receive, straight terminal emulation for use with Telecom Gold, and XMODEM and KERMIT file transfer protocols for error-proof transfer of long files. Would be well worth the money just by itself – and of course you're getting four other very good programs as well.

PLUSES • MINUSES

- Very comprehensive – a genuinely useful comms package
- Ordinary text and 'Viewdata' block graphics
- Can save setups under names and recall them, so you only need work out your baud rates/parities once
- You can set keys to return strings, such as Telecom Gold passwords
- Comes preconfigured to use Prestel and Telecom Gold
- Manual is of very little use

CHITCHAT E-MAIL/VIEWDATA/ COMBO
Sagesoft • £69.99/£69.99/£99.99 • 091 284 7077

Two communications programs for the 8000 series machines that have been around for a good time now. Most of the features you will need are here: message text editor, preprogramming unattended tasks(if you use a suitable "intelligent" modem), directory of stored numbers, copy to printer, and a very useful connect time clock so you can watch your phone bill climb! E-mail is used for simple text phone links like Telecom Gold, whereas you'll need Viewdata if you want to use Prestel. The Combo pack contains both E-mail and Viewdata.

PLUSES • MINUSES

- Good, clear documentation
- Easy for first timers to use
- Built in text editor for pre-sending message preparation
- Pre-definable tasks executable at any preset time if unattended.
- No error corrected file transfer (i.e. Xmodem or CRC)

Dialup *Easy to use*
£89.99 • PMS Communications • 021-643 7688

Offers both E-mail and Viewdata operations. Very easy to use, and offers an XMODEM transfer protocol unlike Sage ChitChat. If you are buying a modem too there are some cut-price bundled deals to be had, eg. the Miracle Technology WS4000 modem.

PLUSES • MINUSES

- Simple to use
- Comprehensive file transfer commands, including XMODEM and the increasingly popular KERMIT
- Runs from the M drive
- Manual is not PCW specific, and the references to 5.25" discs are tedious

COMM+ *Powerful & versatile*
£86.25 • NewStar • 0277 220573

This single package combines both ASCII and full Viewdata block graphics and Telesoftware downloading. A very powerful command language allows you to look for particular messages coming in and take actions, even while doing other things. Its use is only limited by your programming ability.

PLUSES • MINUSES

- Very comprehensive and well indexed ringbound manual
- High quality Viewdata graphics
- Well presented on-line help menus for use by beginners
- Autodialler program works with most manual modems
- Telesoftware downloading facility, with CRC/Xmodem checking
- Very powerful command language, doesn't need much programming skill to learn
- Not recommended for absolute beginners to communications

Modula 2
£45.00 • FTL/Grey Matter • 0364 53499

A compiler. Modula-2 is the successor to Pascal, good for large programs requiring separate compilation.

PLUSES • MINUSES

- Full implementation with extensions.
- Includes libraries of predefined modules
- WordStar-type screen editor included
- Compilation process is longwinded and not for beginners

CBASIC
£45.00 • Digital Research •0635 35304

Compiler

PLUSES • MINUSES

- Easier programming tool than conventional BASIC interpreter
- Very similar to BASIC, so easy to learn
- No text editor – must split your programs into 200 line chunks for RPED to work on
- Programs work no faster than they would in conventional BASIC, sometimes slower

It's BASIC (Vols 1 and 2) *Good value*
£7.95 each • Nabitchi • 051-708 8775/0123

Games with a more serious intent. These discs provide 20 simple games and applications each, and allow programmers to look at the BASIC to see how it's done and to adapt it for their own programs. You can play music on your CP/M and create your own Space Invader figures.

PLUSES • MINUSES

- Twenty programs at rock bottom price.
- Invaluable tips for programmers.
- Costs little more than a blank disc.
- No tutorial guidance
- Non-programmers may get bored.

PROGRAMMING

Programming languages come as either 'compilers' or 'interpreters' – compilers pre-process the program into machine code, so are much faster. The PCW's standard Mallard BASIC and LOGO are both interpreters. Compilers are generally more cumbersome to use than interpreters, but have obvious benefits.

With language compilers in particular it is difficult whether they are reliable and efficient without spending many weeks working with them, impossible for a brief review. If you use a specialised programming language and have any comments that would help us compile a good software file entry for it, we would be pleased to hear from you.

HiSoft C
£39.95 • HiSoft • 0525 718181

A very good C compiler, fast, produces good compact code.

PLUSES • MINUSES

- Compiles program into ordinary CPM .COM file
- Produces compact code
- Fast and inexpensive
- No floating point arithmetic

Arnor C
£49.95 • Arnor • 0733 239011

Good compiler with floating point arithmetic, but not as fast or as cheap as HiSoft C.

PLUSES • MINUSES

- Excellent integrated text editor
- Floating point arithmetic
- Cumbersome to produce .COM files, needs special run time support program
- HiSoft C is faster and cheaper

MIX C
£29.95 • Advantage • 0844 52075

American C compiler. You can buy a full screen editor with it for £19.95 extra. Also machine code assembler & examples for £8.95 each.

PLUSES • MINUSES

- Features a C tutorial
- Comprehensive implementation and massive manual
- Not for the newcomer to programming

Pascal
£39.95 • Hisoft • 0525 718181

A standard full Pascal compiler

PLUSES • MINUSES

- Well integrated text editor – when you hit a compilation error you are returned to the correct point to edit it
- Short compilation time, economical on memory
- Manual makes no attempt to teach you Pascal

Forth
£19.95 • Hisoft • 0525 718181

Forth is an unusual language, somewhere between assembler and C. This is one of the few compilers available for the PCW.

PLUSES • MINUSES

- Comes with a Forth editor
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- Good manual
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- Limited value to most PCW users (except BASIC buffs)

NEXT MONTH

The guide continues next month with the categories of SPREADSHEETS, GRAPHICS and GAMES . The month after that will cover WORDPROCESSORS, ACCOUNTS/ PAYROLL, UTILITY and DTP software, and the month after that it's back to this month's topics.

Our intention is to keep publishing the three parts of the guide in rotation, updating it each month to include all new products. If you would like to see other sections of the guide, back issues of 8000 Plus are available at £1.75 each.

Meanwhile, if you are aware of any significant omissions or errors in the File as published, please let us know. We intend to maintain it as THE authoritative guide to PCW software.

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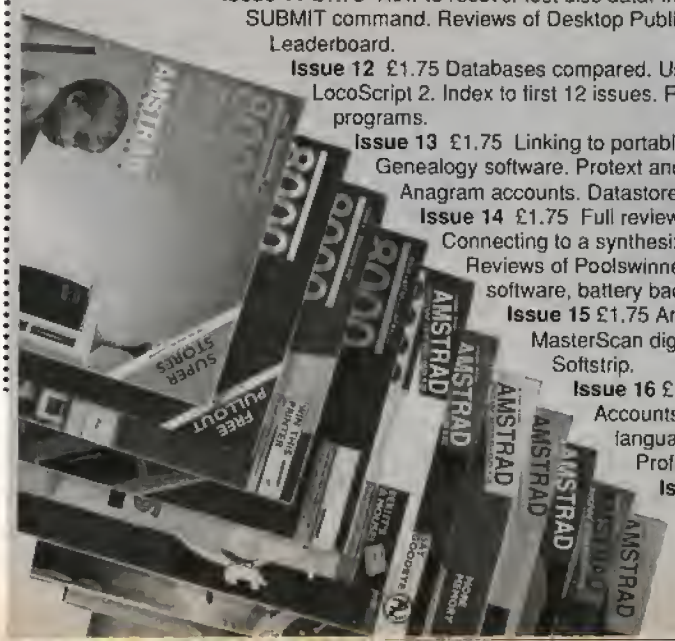

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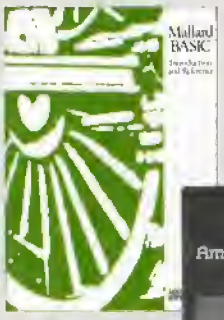

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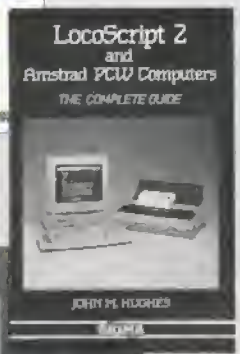

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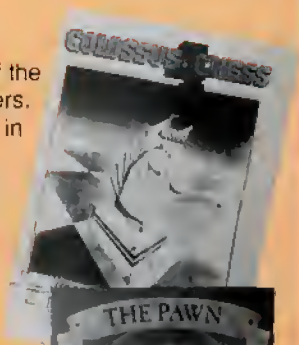

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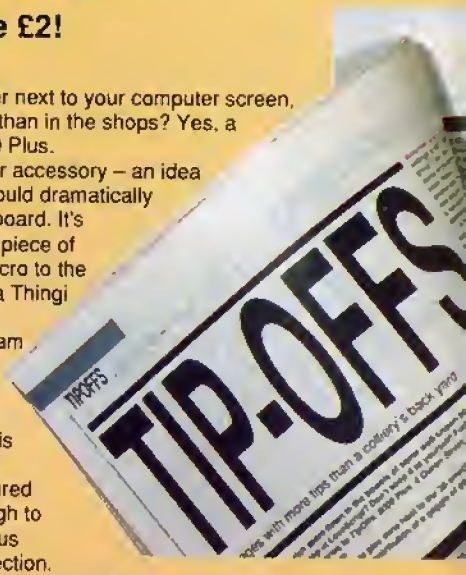

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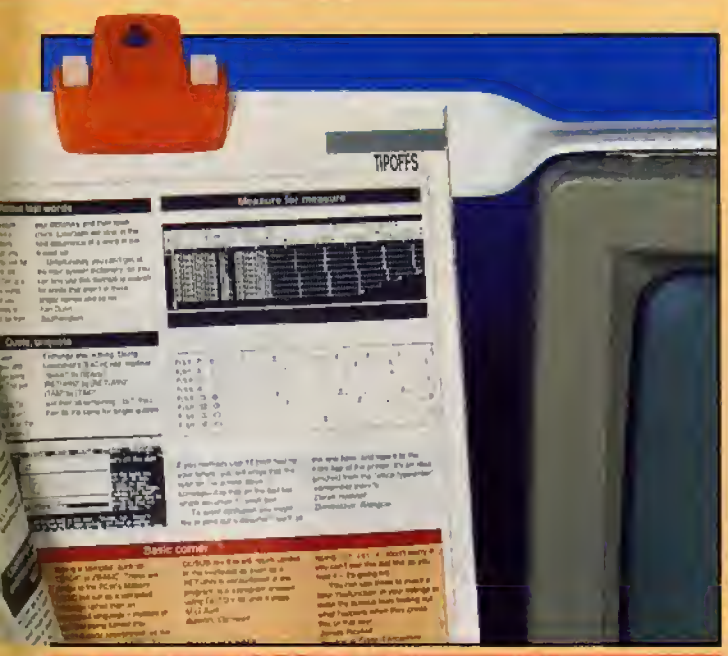

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INTERESTING FACT. 8000 Plus has one of the highest percentages of postal subscribers of any magazine in the UK Most PCW users would appear to be incredibly enthusiastic about their machines and rely on the magazine for a regular source of tips, reviews and general advice. It's the only way of keeping properly in touch with the bubbling, constantly-changing PCW scene

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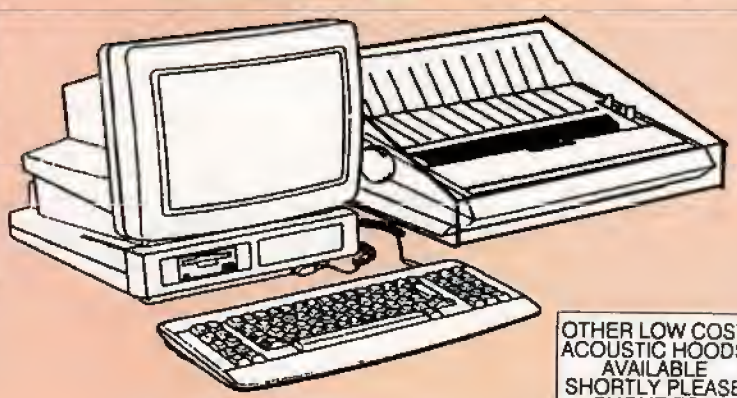

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POSTSCRIPT

A convocation of canny comments cautiously compiled by a compassionate Ed.

We've not had such a response to an individual piece of software since the launch of LocoScript 2. What is it? Mini Office Professional, of course, the sub-£30 complete software suite. Can it be as good as it seems? Among the other topics on debate this month are old favourites like ribbons and faulty discs, DTP and printers.

If you've got answers to anyone else's problems, or problems of your own to tax us with, let us know by writing to *PostScript, 8000 Plus, 4 Queen Street, Bath BA1 1EJ.* Sorry, but we can't give personal replies.

Joystick moans

I would like to moan about joystick interfaces. When you initially reviewed the DK'Tronics Joystick you thought it was very good and would become one of the standards, you even sold it via your offer pages. Why is it then that the software houses write joystick routines for every interface that exists except mine? I have Starglider which works with the Kempston Joystick and Mouse, the Joycestick and AMX mouse, but not the DK'Tronics Interface. I have this expensive white box clamped to the back of my PCW and apart from playing Tomahawk and getting in the way of my dust cover it's redundant. In future when you review a game could you please specify not only that it's joystick compatible, but with which particular interface it is compatible.

Talking about games reviews, I think the awards for PCW Games of the Year were a load of rubbish. If you are going to do this sort of thing you should let the readers decide, not tell them. How could you say that Leaderboard was the best simulation when you have not even reviewed one of the best selling simulations on the PCW market, namely ACE?

Moving on to Arcade Games, Head Over Heels might be a good game but it shouldn't have been number 1. This format of 3D puzzle games has been flogged to death ever since the original Ultimate games were published soon after the launch of the ZX Spectrum. Sales in Blackpool, and I am sure in much of the country have shown that Starglider must be the best arcade game. Head Over Heels certainly did not deserve the honour of the best game of the year. Tony Flanagan's reviews are usually very true and accurate, but I am afraid his choices are ludicrous. I agree that the Pawn is the best British adventure; I would have picked Stationfall as the best Infocom, but I suppose where Leather Goddesses are concerned, it's whatever turns you on!

James Roskell
Blackpool, Lancs

● *DK'Tronics joystick is not widely supported because the company went bust last year. We couldn't reasonably have foreseen this in the review. The new Match Day II game (see this month's news) is DK'Tronics compatible.*

Make the games awards democratic? Outrageous. Like Parliament, 8000 Plus is here to lead public opinion, not follow it. Anyway, it's more fun to print letters of disagreement afterwards!

Guilty as charged

I wouldn't necessarily say, as you do in the marginal note to your DTP article in the January issue of 8000 Plus, that Greenwood and Welsh's "Essential Law for Journalists" is the definitive guide to libel, but I am sure it doesn't give the advice you print alongside.

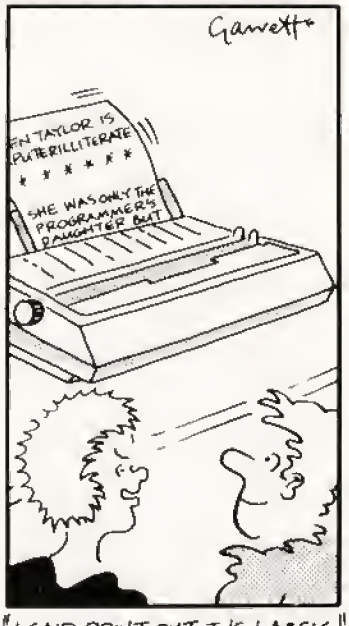
Please note: if you are sued for publishing a defamatory statement, your defence would *not* "have to show that not only what you wrote was true, but that it was also relevant and in the public interest."

If you can prove that the defamatory statement is true, you have a complete defence to a claim for libel – irrelevance and lack of public interest notwithstanding. The days of "The greater the truth, the greater the libel" went out with the Star Chamber. If you don't infringe the law of copyright and of confidential information, the courts will (often with surprising determination) protect your freedom of speech to the extent of always allowing the truth to be published.

The Courts even, as a matter of policy, refuse to grant an interim injunction (usually, inaccurately, called a "gagging writ" by the Press) to the Plaintiff, no matter how damaging your allegation may be: provided you, the defendant, swear a credible affidavit that the defamatory statement you wish to print is true.

Thus, if I were to write, "8000 Plus publishes misleading legal advice" you couldn't touch me.

Jeffrey Littman
Gray's Inn,
London



"I SAID PRINT OUT THE LABELS"

Daisywheel problems

Two years ago I returned from overseas and equipped myself with an 8256 to support my freelance "Far East Consultant" role.

The PCW has proved totally reliable, but the less-than-perfect typescript has been something of a disadvantage, particularly in dealing with face-conscious Japan. So I have been waiting, since the advent of LocoScript 2, for an authoritative guide to daisy-wheel options, and your article was the answer to my problem.

I immediately allowed myself the Christmas self-indulgence of a Panasonic KX-P3131U, and am more than pleased with the result. However, I have found some oddities in its operation on which I should appreciate your advice – particularly if this advice could take account of the fact that I am the character you expressly identified, who does not know his escape code form his Morse code! My problems may stem from the fact that I am using the standard D630 LocoScript printer file, and if there is any way to obtain a specific KX-P3131U driver I suppose this might be the answer.

In brief, the main oddities seem to be:-

1) The printer operates one way only, although nominally bi-directional;

2) Some mismatching of keys and script, notably (so far) the £, # and ½ symbols.

3) Screen indicates "Waiting for Paper" even when properly supplied.

Robert W Allen
Bramhall, Cheshire

● *The D630 is the correct LocoScript driver to use for your Panasonic, since it is supposed to behave just like a standard Diabolo 630 printer. LocoScript seems to only print one way on external printers (but CP/M word processors like Protext will drive it bi-directionally). As for mismatched characters, either by trial and error work out and remember that, for example, \ on screen gives ½ on the printer, or contact Locomotive who have a special printwheel configurer disc (this costs £14.95). Finally, the reason that the 'waiting for paper' problem arises is that the automatic paper sensor feature only works with the standard PCW printer; on other printers LocoScript always pauses after each page unless you set it up for 'continuous stationery'.*

Professional behaviour?

My favourite PCW magazine seemed to be a long time coming this month, so I bought some others only to find that their 'news stories' consisted of things already fully reviewed in 8000 Plus. Information technology's march to speed up and revolutionise the publishing industry only seems to have reached Bath so far!

Obligatory flattery done with, in your review of Database's 'Mini Office Professional' last month you suggested that this particular piece of software could do for that side of the busines what Mr. Sugar had done for the hardware. Looking at the business with the naivety of a newcomer, my observation would be that this suggestion may be far more profound than it at first appears.

To illustrate, I refer to your News Plus piece on WordStar Professional 4. How MicroPro can justify two hundred quid for a piece of software little (if at all) better than products a tenth the price is beyond me.

It might be said that Locomotive hold an 'unfair' advantage by having all their software bundled with the three-quarter million plus PCWs already sold. If MicroPro could shift a million copies of WordStar maybe it's a fair bet *that* would only cost twenty quid too, but like so many other software producers they are imprisoned by the precedent of their own extortionate pricing policies.

Database Software, however, have dived straight in with the assumption that they are going to sell Mini Office Pro by the van load. This is the kind of marketing strategy that has put Amstrad where it is, and one can only speculate unfavourably on the future of other software companies faced with such aggressive competition.

Database have pulled the rug out from under scores of companies poised to jump on the PCW bandwagon. Anyone looking to buy a database or spreadsheet will be hard pressed to avoid the very obvious attractions of MOP, and I count myself as one of those lured by the keen price. The package works well enough for my needs, but for the dreadful manual.

Perhaps the poor documentation is the chink in the armour, possibly left deliberately by Database to allow some degree of enterprise on the part of the competition, ie. the independent tutorial writers.

If the software industry implodes as a result of its products being sold at what certain vested interest might tern 'unrealistically low' prices, who will be to blame? Those who maintain their products at high levels in order to ensure a proper return on their investment in the talents of software writers? Those who believe that domestic computer users are entitled to access to good software at reasonable prices? Or perhaps Alan Sugar will be made to carry the can for making the whole thing viable in the first place.

Arthur Wardell
Halifax, W. Yorks.

● *WordStar, allegedly, has sold **three** million copies, so by your reckoning should be even cheaper than Mini Office/LocoScript! WordStar comes from the IBM PC world where if something costs less that £100 there's something suspect about it, and MicroPro haven't ever understood the PCW market.*

You'll no doubt be amused to know that most of the other PCW magazines which you say are behind 8000 Plus are published by Database Publications – a close relative of Database Software whose praises you sing!

[EXTRA] Professional

For some time now I have been looking to purchase a database package. None of the reviews of off-the-shelf databases have ever stimulated me to part with the hard earned green stuff until your review of Mini Office Professional. Could this be it? Never, not at this cheapo price. Would I be making a mistake?

I took the chance, and guess what... it is superb, extremely fast, quite sophisticated and certainly equitable with the PC industry standards like WordStar and SuperCalc4 which I use every day at work on a Compaq. I can honestly say that, although excellent, the review in your magazine does not do the package justice. I will, however, agree with your reviewer that if this product does not become the yardstick then truly there is no justice!

By the way, despite your 'Minus' point there *is* an on-screen word counter and it's fast. Just press [EXTRA]+A at any time in the word processor.

Phil Howell
Chippenham, Wilts

● *Thanks for the correction about the word counter. The version we reviewed didn't have this, and a company spokesman told us there wouldn't ever be one! Luckily they must have changed their minds.*

Scrunched labels

I am a pensioner who dabbles a little in an endeavour to become computerate and keep the grey matter from seizing up.

I am having a little difficulty at the moment feeding labels through the machine in a regular and straight manner. The only success I have had is by attaching the label strip to a piece of continuous paper and feeding it with the tractor feed.

Am I using the wrong kind of label paper?

William Stephen
Dundee

● *You may find it easier if you buy labels that are on a continuous strip with holes at the side which grip into the feeder mechanism, hence you get regular and properly spaced labels. They are a bit more expensive, are sold in most decent stationers and come in bunches of 500 or so, but work very well.*

Simpler Accounts

With reference to your article in the January 1988 edition of 8000 Plus in which you comment on our program, Simple Accounts:

The facility to change an entry is not included within the program Simple Accounts. The recommended method of correcting an entry is to make a contra-entry. The effect of it is is to cancel out the incorrect entry in all respects, and indeed to provide an audit trail.

We are aware, however, that users will occasionally confirm an entry which is incorrect and may therefore wish to make alterations

Long and the short of it

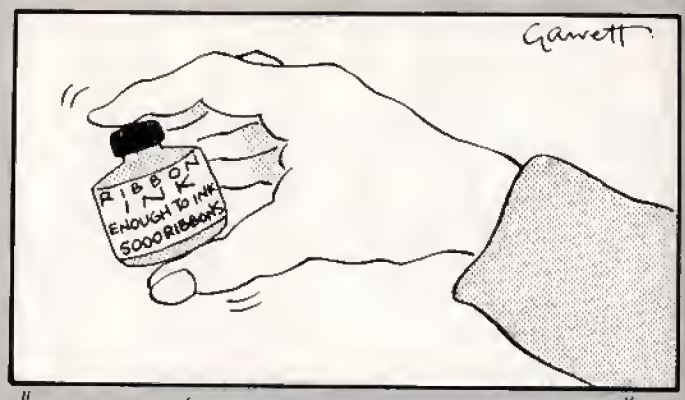
Apart from the odd gripe about re-inked ribbons there has been little said in the computer press about printer ribbons in general and their value for money in particular. Thinking it was about time someone said something, I carried out a mini-survey of 8K+ advertisers, and using their descriptions compiled the following table. VAT and p&p have been taken into account where appropriate. The numbers in brackets are the number of adverts seen for each type:

Multistrike (2)	£6.00 & £6.75
Carbon (4)	£5.45 – £5.95
Film (1)	£7.75
Film Carbon (1)	£6.50
Fabric (3)	£3.83 – £6.56
Seikosha (1)	£4.75
'PCW8256/8512' (12)	£3.75 – £7.25

In the last category some lengths were quoted, eg. 1m @ £5.75: 2m @£7.75: 14m @£3.75.

With a price range of £3.75 – £7.75 there must be savings to be made somewhere. Now comes the problem; how can like be compared with like if material and/or length isn't quoted? Sometimes what appears to be a very attractive price doesn't include VAT and/or p&p.

By using mainly draft quality, the ribbon supplied with my 8512 lasted many hundreds of A4 pages and appeared to be good for hundreds more. Until, that is, I carried out a number of dumps of the Disc management screen. Result, rapid demise of ribbon.



"JUST SHOWS HOW SHORT THEY ARE . . . ."

This makes me think that some examples of graphics and Desk Top Publishing I've seen must be extremely expensive to produce in terms of ribbons.

My 2nd ribbon, a "standard" Amstrad replacement (£5.17), never did print out very black and after 2-300 pages became unacceptable. My 3rd and current ribbon, described as a 'high quality film carbon' (£4.35) has printed several hundred pages (mainly draft quality) and the density is still

acceptable.

My spare is a 14 metre fabric ribbon by 'Pelikan' (£6.56). Bought because the material and length were detailed on the box; it is good value compared to others? I won't know till it's worn out.

So please, how about an informed article on 'best buys' in printer ribbons. I end with a plea to 8K+ advertisers to give us more information on what they are offering us.

Charles Slamon
Birchington, Kent

● *The first four categories you list are all of the new 'carbon film' type which Amstrad now endorse but many readers of 8000 Plus seem unhappy with. Fabric/Seikosha/Pelikan ribbons are the old inked nylon type which fade gracefully with age rather than suddenly stopping. There are so many types it is hard to give a guide, but the readers can do a pence-per-metre of ribbon calculation fairly easily. If any manufacturers would like to send us samples maybe we could publish a list of '8000 Plus approved ribbons'.*

to the information stored within the program. We are also aware that this practice may be frowned upon by purists.

In order to provide the user with a means of correcting entries whilst retaining integrity with the program, we have made a utility program available to Simple Accounts users. The Entry Change utility exists as a stand-alone module so that its use may be restricted to key personnel. In addition, the Entry Change facility is only available for the current (incomplete) accounting period for which the printed reports carry the wording "Provisional for Folio...". Since information may be added to the current folio, we see no logical reason why it should not also be altered.

We feel that by offering the Entry Change as a separate program, our approach satisfies the requirements of both purists and users.

Merrick Allsopp
Cornix Software, Letchworth

Happy Camsoft user

Having run Camsoft PSIL for 21 months we feel qualified to evaluate it, and to refute your criticisms (issue 16) which are balderdash.

As a non-credit business with a turnover of £150,000 pa PSIL enables us to control 550 stock items, a facility you ignore, and it tells us the profit on each. Apart from purchase orders placed and goods received, no data is entered until the month we have produced, with all print-outs, a complete set of accounts up to the previous day, including a stock reconciled profit and loss account, a full evaluated stock report, and financial statistics too numerous and useful to mention here. Our Annual Accounts are completed by the third day of the new Financial Year.

There are a couple of bugs in our copy ofPSIL, and there are improvements we would like to see such as a choice between VAT inclusive or exclusive when invoicing, evaluation of stock without having to print out (43 pages), reduction of the 1 3/8" wasted space at the bottom of each stock print-out page, and purchases in the 'all transactions' version of the Nominal Ledger print out to be in cheque number order instead of date order.

Having said this, the 8000 Plus Value Verdict is absurd. PSIL warrants five on all headings except perhaps Range of Features and Documentation. During 16 years of trading the £150.00 we paid for PSIL is the best investment we have ever made.

Bert E Bragg
Bury St Edmunds

● *Our reviewer's main criticism wasn't that PSIL didn't do the accounts properly, just that the way it worked and ease of use was such that it was difficult to get to grips with in comparison to the other packages on test. How many of the other ones have you used? Still, it's good to know that there's a powerful package waiting for you after the initial acclimatisation period.*

A sharpened stencil

I publish a local bimonthly newsletter for a medical charity, working with my upgraded 8256 from the front bedroom. We send out 50 copies at a time, no problem, and with that very flexible dot matrix printer, we can produce a nice, lively text.

Is it okay to cut a stencil on the dot-matrix printer? Some say it works fine, others that the print head will rapidly have to be replaced, which is a hassle as well as costing money we can ill afford. (An in-joke – look who the letter's from).

In 1988 we'd like to expand to 200/300 copies per issue. The dilemma is that an issue of this size is too small to justify using a professional printer, while photocopying at 10p a sheet is beyond our means. On the other hand, I have reservations about producing 200/300 copies of a four page newsletter on the Amstrad!

I'd be really glad to have your advice and suggestions. And to hear from anyone else who has tackled this problem successfully with a word processor.

Anthea Beckett
National Eczema Society, London

● *As long as you are prepared to de-gunge the print head regularly, printing stencils is probably OK. Keep a can of lighter fuel, WD-40 or other solvent to hand, and if the stencil wax starts to gum the pins up (characters become badly defined) you'll need to unclip the print head and swab it down.*

Alternatively, what about finding a Banda spirit duplicator and seeing if that works (you print normally on paper for those, and a waxed backing sheet takes the impression).

Crowning glory

What's all this then – eh? You certainly kept that quiet. A starring role in Coronation Street no less!

There you were, at approximately 7.40pm. Lurking on a shelf in Rita's Kabin. What's more you were the only computer rag there. Trouble is, I'm pretty sure it was December's copy. I'd have a word with Mavis about her selling technique if I was you. If she was more interested in selling 8000 Plus she would maybe forget about the WIMP, Derek, (can't get away from computers, can you?)

Margaret Reid
Livingston

BASIC manual errors

I really want to get in to programming for myself, as then I can design and produce programs to my requirements in photography and journalism, a profession I have been associated with for nearly 30 years. Consequently I acquired the official BASIC manual, being particularly interested in the manuals Jetsam feature (chapter 7 page 89, 'keyed access files for data bases').

The example program for an address list which starts on page 91 will not work because part of the program, lines 4520

```
peraddr(1)=addrfld$1
```

through to 4560, is incorrect. I spent much of my time trying to figure out why it wouldn't work going through this simple program with a fine tooth comb, and then it dawned on me. I thought about good old faithful 8000 Plus and its September issue where you gave a very good example of a Jetsam database for a club membership file etc, and one I would certainly recommend as a basis to model on. The lines should read

```
4520 peraddr$(1)=addrfld1$
```

The point that I am making about the manual is that this is very bad indeed and especially so for the complete novice. If this is

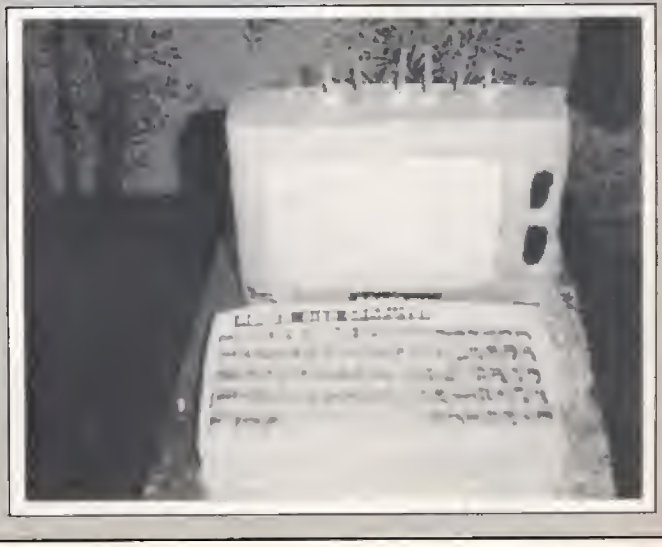
Taking the biscuit

As you're not publishing any of my letters, I am enclosing a photograph of my 512-bite computer cake in order to provoke some reaction from you. O.K – so it's a lousy photo, but after buying a PCW, do you think I could afford a decent camera?

PS I am enclosing the last remaining piece of the cake.

Kathleen Axe
Birmingham

● *Just goes to show that getting publicity in national magazines is a piece of cake.*



supposed to be the authority on BASIC, then I have my doubts. I haven't read right through the manual as I got a considerable amount of knowledge form the first blue manual, but the point is that if there are any other such mistakes then heaven help the user trying to learn.

Before I forget, referring back to the manual's data base program, line 220 in the complete program, which starts at page 103, is also wrong and should read : `220 file%=1: recleng%=122: lock%=2`

Derek Holden
Walsall, West Mids.

● *Yes, the manual has misprinted these lines, thanks for the corrections. Lucky 9512 owners will find the (correct!) example files on their CP/M disc anyway so needn't retype the listing.*

In a book of 450 pages there are bound to be a few errors, and Locomotive say they are correcting them all the time. They deliberately use small print runs so that they can correct mistakes regularly in new printings, which seems a jolly good idea.

We suggest that if you are still looking to buy a BASIC manual you buy from Locomotive rather than Amstrad. The edition of the manual with an Amstrad-branded cover is a licensed reprint from Locomotive, but this is done in larger print runs and mistakes will be corrected less often. The BASIC manual in our own special offer pages are Locomotive's.

Time of life

Why this concern with age (PostScript, issue 17)? You should learn to use a word processor when you need it. I bought my first, a PCW8512, on 16th November 1987 and celebrated my 79th birthday four days later. I hope to take it to Spain with me soon to finish the definitive typescript for a small book and start on that of a larger one.

George Discombe
Haywards Heath, Sussex

Real programmers...

I've a couple of points in response to the article on programming languages in issue 16.

The article states that it is 'much easier' to write code for an interpreted language than for a compiled one. This is supposedly because of the hassle involved in editing the code and re-compiling. I am a very satisfied user of Hisoft's Pascal80 and, believe me, the use of a full-screen interactive editor and fast compiler makes me wonder how I could ever stand debugging Mallard BASIC code using that line-editor.

The article also states that 'if you have got used to the freedom of being able to say GOTO any line you like in BASIC, you will sometimes find yourself having to write 20 lines of Pascal to do the same thing'. The 20 might not be meant to be taken literally, but the impression is left that Pascal makes simple tasks awkward. Not so. The control structures of Pascal encourage good programming practice not by unfriendly restrictions but by promoting simple, logical and elegant program design. Programming without GOTOs quickly becomes second nature; they are simply unnecessary and to suggest that code needs to be written 'to do the same thing' is highly misleading.

Gary Jones
Ruislip

● *The larger the program, the more time-effective a compiled system becomes, although I still think that for little 10 line programs having to go through a compilation process is tedious. You're obviously a well-trained programmer if you can survive without GOTOs. The academic journals for the last 20 years have been full of the debate as to whether the GOTO statement is a Good Thing, many people reckon its use leads to incomprehensible programs. I think that as long as you understand what you are doing, BASIC's informal structure with lots of 'naughty' (according to real programmers) GOTOs allows you to write simple programs compactly and fast. For complex programs, a bit of programming self-discipline is required.*

Cleanliness is godliness

In February's issue I note your news item on Cleaner Discs and advertisements for same.

I was tempted to buy one several weeks ago but wondered why such a simple device had taken so long to appear on the market and whether there are any snags. At the "Which Computer Show" at the N.E.C. Birmingham this week I persevered on the Amstrad stand until I found a representative who could deal with my enquiry.

He advised that the official Amstrad line is that the disc drive is adequately sealed and could be damaged by the abrasive action or dirt carried over by this type of cleaner. This would invalidate any warrantee and he would advise against their use.

What do you and the manufacturers of Disc Cleaners say and would Amstrad like to confirm this advice?

M S Gumbley
Leamington Spa, Warwicks

● *We rang Amstrad's engineering department and they said that as far as they know disc head cleaners won't do any harm, it's just that the 3" drives have a built-in cleaning cloth anyway so an extra cleaner is not really necessary.*

An independent consultant who we trust (having no connection to either Amstrad or the disc cleaner manufacturers) tells us that he has taken an Amstrad 3" disc drive apart, it isn't in any way 'sealed' (whatever Amstrad mean by that) and can be safely cleaned with a cleaning disc. However, our man adds that contrary to the supplier's advice you should not clean your disc heads every week but only if regular disc errors start to occur. The cleaner cloth rubbing on the disc head might cause trouble if you use it every day, which is quite unnecessary.

Overall, it seems that the best bet is not to clean your heads until errors start happening, then to use a cleaner disc. After all, you haven't got much to lose at that stage and £9.95 for the chance of saving your disc drive and recovering data seems like fair value.

Can you please tell me how to "Engage drive heads" on my 8512? This is the instruction given with the 'Clearhead' Disc Drive Head Cleaning Kit sold by SBS who advertise in 8000 Plus.

I had hoped that by means of this kit I would solve the problem of the drive head on the A drive occasionally failing to engage. Sometimes it occurs when loading the Start of Day disc. Just at the point where the printer should give its grunt the head stops buzzing and the red light stops flashing – but the disc keeps on spinning. No matter what keys I press nothing happens.

A W S Flockhart
Edinburgh

● *The best way to make the heads touch the cleaning disc is to put the disc in with the PCW switched on and type DIR (in CP/M) or press the Disc Change key (in LocoScript). This will give an error message because the cleaning disc isn't a real disc, but the heads will have made contact at least.*

Scrabbling around

I am very pleased with the special offer of Scrabble, which I took advantage of recently. There are, however, a couple of points on which I should be grateful for your comments.

1. You are always recommending that copies be made of discs, but Scrabble refuses to be copied by DISCKIT: the message "Disc error track 0, sector #01 – no data. This error is within system track" appears every time I try.

2. Irrespective of answering 'yes' or 'no' to the question, the computer insists on showing itself thinking.

3. I am not entirely convinced that many of the words played by the computer are actually valid. I cannot find the meanings of many of them and would dearly love to know the dictionary in which they are to be found.

4. In view of the weird words which the computer produces I cannot understand why it should challenge perfectly normal, everyday words when I play them. Some of the words challenged are: *illegal, horrid, bungle, folio, divan, berg, plait, relic, satyr, crayon, eater, unreal, fiance, invalid, lentil, ration, equip, lurker, durable...* and many more. Yet it insists that zo and dzo are valid when it uses them!

P D Bishop
Nawton

● *Scrabble is copy-protected to prevent people ripping off copies without paying for it. This means that you can't make a back-up of the disc, but if anything goes wrong the makers will give you a new one.*

Your point 2 is an error in the games's programming and seems to be with us for good. Apparently Scrabble uses Chambers' Dictionary which is well-known for a few idiosyncratic entries. There seems no way to alter its store of words, either adding or subtracting – you'll just have to take advantage of its guileless question, 'I challenge "lentil"' by inventing spurious words and assuring the computer they really exist. It's all a bit zo-zo.

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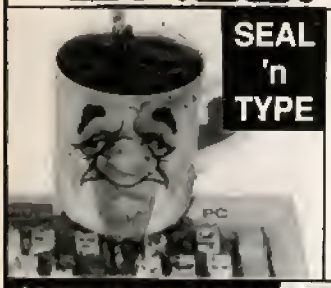

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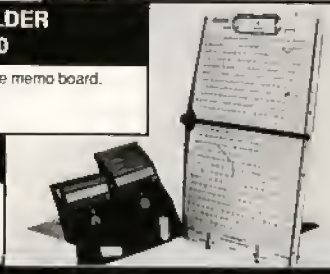

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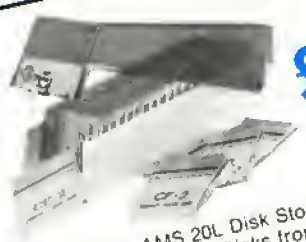

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